

FARM REPORT



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FROM THE PRESIDENT'S DESK: MINER INSTITUTE BY THE NUMBERS, 2018

I just pulled together some key performance numbers for our Foundation Trustees about the programs and impact that Miner Institute has had in 2018. Every time I prepare this report, I am impressed by what our modest-sized staff of about 55 people is able to accomplish in research, education, and demonstration programs. As president I feel honored, fortunate, and exhilarated to lead such a productive team. Here are some of the Institute performance numbers that jumped out at me:

- 76 students educated: this number includes our undergraduate and graduate programs plus interns. We have year-long internships for the dairy farm, our equine program, and agricultural research. We have graduate students working in forage and fiber for dairy cattle, nutrient management and water quality, and cattle behavior and management. Our primary undergraduate programs are the Advanced Dairy Management and Applied Environmental Science semesters, plus Summer Experiences in farming, equine, and research.
- 3,671 visitors entered our stone gates: we always strive for an overall attendance figure of 3,000 to 4,000 people between our educational programs and our heritage exhibits. So far this year, we've hosted 32 events

ranging from Dairy Day, EquiDay, and Crop Congress to High School Chemistry Labs and Farm Days for Fifth Graders.

- \$400,000: value of the research proposals written by our research staff and funded, as well as equipment and facilities supplied by sponsors to support our research efforts.
- 64 research and outreach publications: this number includes five peer-reviewed journal articles, 19 research abstracts, with the remainder being industry and popular press publications. Of course, a key component is The Farm Report and The Stable Sheet.
- 85 industry and research presentations in the US, Canada, and Japan focused on dairy, crop, and nutrient management. That is a remarkable footprint given that only 4 or 5 of our staff do the majority of the outreach presentations.
- 97th national percentile ranking of our Dairy Herd. In 2018, our dairy herd continued to excel in performance which provides us with a tremendous asset to conduct our research and education programs. Highlights from the most recent DHIA test include: 30,560 RHA, 4.0% fat, 3.1% protein,

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CREATING MICROCLIMATES FOR CALVES

In the last Farm Report I discussed how the maintenance requirements for calves increase when colder temperatures come knocking on our doors. This is especially true for the youngest members of the herd, under three weeks of age. While increasing nutrients is one part of the story of meeting the requirements of the calves there are also other methods to help alleviate the cold bite of Winter. We have greater control when it comes to what goes into the calf in terms of nutrients, but can we also control each calf's environment by creating microclimates? We have little control on what Mother Nature throws our way but there are several steps that we as managers can make in order to influence the environment of the calf. Ultimately these steps will alleviate the severity of environmental temperatures and help our calves grow.

- 1. Right after birth:** Get calves dry and warm ASAP. Try to minimize the time between when a calf is born and when it can get dried off. Towels can be used to help dry calves off. Additionally, it might be helpful to get a warming box. While a calf's hair does provide
- 2. During feeding:** Regardless of the nutritional value, make sure every liquid meal a calf gets is at or just above body temperature (target 105°F) when the calf is consuming that meal. Usually, the milk replacer tag has a recommendation for mixing temperature but also make sure that when that milk replacer finally makes it to the calf it is not below 105°F. They will expend additional energy to reheat that meal, increasing maintenance.
- 3. Starter:** Provide starter from an early age. As calves start to consume it and the rumen starts to ferment feedstuff it will generate extra heat, essentially creating their own space heater. Water-Offer water several times daily at calf body temperature. Water intake is linked to starter intake and rumen development. Research has shown that provision of warm water increases daily consumption throughout the preweaning period.
- 4. Bedding:** Make sure bedding is dry and that there's a lot of it. Straw is insulating to the calf and is ideal in cold weather. When the calf is laying down you shouldn't see its
- 5. An extra layer:** Insulating calf jackets can be a great addition to a calf program. After my last article a farmer wrote to me indicating he felt they can be quite effective in keeping calves warm, and the jackets themselves are quite durable. Make sure you have enough jackets for your youngest calves at the highest calving level during the winter months. You may need extra so that you can wash them and make sure they stay relatively clean and dry.
- 6. Ventilation:** In the winter months there should be adequate air turnover to minimize ammonia and the accumulation of other microorganisms while making sure there aren't any drafts directly on the calf.

— Sarah Morrison
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SOIL SAMPLING, ROTATION BENEFITS

You should be well on your way in crop planning for 2019, and if you haven't done fall soil sampling you'd better get moving. I like fall soil sampling much better than sampling at any other time of year; more time to do a good job than during the spring rush, and (particularly for soil test K) fall soil sampling likely provides more reliable results. Use the same soil test lab every year, or if this isn't possible use labs that use the same soil extractant. If you do this you can compare soil test results from year to year as well as over several years. This can help evaluate the impact of your manure and fertilizer program.

If you're going to plant corn for more than five years in a field there'd better be a very good reason for doing so. Continuous corn has higher applied N needs (manure and/or commercial fertilizer) and is more likely to have insect and disease problems. Pesticides don't control insect problems nearly as effectively as a good rotation plan. First-year corn yields are often the highest on the farm — and the least expensive per ton of silage. Even if milk prices do improve modestly, 2019 will probably be another tough year in the dairy business, so a good year to do whatever you can to limit input costs without reducing crop yields. Notill equipment has greatly improved over the years, and (especially if it's time to trade corn planters or grain drills) you should consider purchasing one that will do both conventional and notill planting. Notill has the capability of saving time — and topsoil.

— E.T.

HELLO FROM THE SHOW-ME STATE

Hello, my name is Katie Smith, I'm the new research intern at Miner Institute. I'm from a town about 30 minutes from Kansas City, Missouri (Go Chiefs!). I graduated from the University of Missouri in May 2017 with a Bachelor's degree in Animal Science. Like many young animal science majors, I had aspirations of attending vet school to become a large animal veterinarian. This led me to a summer internship as an AI technician on a large dairy in southern Wyoming. To my delight, my role was much broader than "walking and chalking" and breeding cows and heifers. I was also involved in most day-to-day aspects of the farm, thanks to the mentorship of a passionate farm manager. As the weeks progressed I found less interest in the veterinary and reproductive aspects of my job, and more interest in nutrition. This experience cemented my love of dairy

cattle and dairy production. Prior to this, most of my experience had been with beef and equine in a veterinary setting but after this internship I started down a different path.

In the year after I graduated I enrolled in several graduate-level animal science courses and became the student manager of the grazing herd at the University of Missouri's dairy farm. I was in charge of around 40 head: 23 Holstein/Jersey crosses, while the remainder were several Guernseys and Holsteins from the freestall barn. Every morning I would walk my cows up from pasture for milking and their daily grain allotment, assess the paddock they were on (alfalfa or ryegrass) for forage supply, and decide the next paddock for that day. While that seems quite simple, each day was a new adventure since there was always some new crisis to

deal with, but I loved being on the farm every day. During that experience, I not only learned a lot about dairy cows and pasture management, but I learned a lot about trusting and having confidence in the management decisions I made. When I got the opportunity to come to Miner Institute, it wasn't easy decision to leave my small herd in the hands of someone new, but it was worth it for this new experience.

I am so thankful for this chance to expand my knowledge of the dairy industry as a whole, but specifically in dairy nutrition and fiber digestibility. My goal is to gain new insights that I can apply to help producers. So if you see me around, feel free to say hello, and before you ask, yes I'm cold!

— Katie Smith
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NEMATODE SEED TREATMENTS

One of the company-applied treatment options for seed corn will provide some protection from nematodes. You won't see nematodes in the soil since the species attacking corn are only about 1 mm (0.04") long and they feed on the corn's root system so damage is often overlooked. But that doesn't mean that they aren't doing economic damage. The manufacturer of one nematicide product reports a yield loss of 6 bushels/acre based on 140 trials, which is equivalent to about 1 ton of corn silage per acre — does that get your attention?

Many years ago I did some nematode testing in Northeastern NY, sending soil samples and corn root systems to Iowa State University for evaluation. Not only did most of the samples test positive for nematodes, (primarily root lesion nematode, also dagger nematode) but in some cases the population was well above what would be considered a treatment threshold. Nematodes also attack soybeans but we don't have any regional data on this.

Are nematodes causing yield losses in your corn fields? One way to get some idea of the answer is to buy some seed corn with a nematode pretreatment, and the same hybrid with a different (non-nematode) seed treatment, both with the same rate of insecticide pretreatment. Put each seed lot in half your planter units, and by planting up and back you should wind up with a harvestable-size strip of each seed treatment. Would you be able to see a 1-ton yield difference? Probably not, but much more than a ton and you might. However, if you have drive-over scales it should be easy to detect any yield difference. I don't think we do nearly enough of these simple strip tests, especially with the decreased amount of research from cash-strapped Land Grant university research programs.

— E.T.

THE DELICATE SEX?

In its 8-1 decision in *Bradwell vs. Illinois*, in 1872 the U.S. Supreme Court declared that Myra Bradwell could be denied the right to practice law because she was a woman. Part of Justice Joseph Bradley's majority opinion: "The natural timidity and delicacy which belongs to the female sex evidently unfits it for many of the occupations of civil life."

Timid? Delicate? Hoo, Justice Bradley obviously never met some of the women I've had the opportunity (and generally the privilege) to work with over the past half-century. Attitudes and their impact have changed, but they've taken considerable time to do so: I lecture at the Cornell University vet college each summer and so have had the chance to wander through the hallways there. On the walls are long rows of photos of each graduating class dating back over 100 years. Through at least the first half of the 20th century, year after year the class photos revealed that almost every one of the newly-minted veterinarians were men. Oh, a female graduate would pop up on occasion, but only one. Even when I was in college at UConn during the 1960s the pre-vet students there were under the impression that while there wasn't a gender quota at the Cornell vet college, only one woman was going to be accepted each year. And looking at the photos for those years, mostly what you see is a bunch of guys and one lone (but perhaps not lonely) woman. And in the 1970s when I accompanied a class of Cornell University agronomy

students on a 4-week bus trip to the West Coast there were 30-some guys and one female — a student from Sweden.

A similar situation existed with Cornell University Cooperative Extension. When I started as a County Ag Agent in 1966 there were plenty of woman 4-H and "Home Ec" Extension Agents, but agriculture was still a man's world: Nary a woman in dairy, field crops or farm management, and it was thus for most of the 15 years I spent in Extension. Now there are women Extension Educators (the current term) in all phases of commercial agriculture, and we've seen similar changes in the number of female agribusiness company reps, both animal- and crops-related.

I mentioned my annual lecture at the Cornell vet college, in what's called the "Summer Dairy Institute". This program consists of 25-30 vet college seniors and recent graduates from across North America and usually several foreign countries, all who will find employment as production animal veterinarians. I've been speaking at the SDI for about 12 years, and each year there are more women than men in the group. How times have changed! Certainly they've changed since 1872, but in many agricultural professions there's been more of a change in this regard since 1972 than in the 100 years prior to that.

— E.T.

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117,000 SCC, 10 mg/dl MUN, and 26% pregnancy rate, and 3x/day milking frequency.

Of course, the complete story for any organization lies behind the numbers. But, these few key metrics show that the Institute is on-track and that our staff does a fantastic job. As in past years, I close the books on 2018 with enormous satisfaction, and can't wait to get started on 2019!

— Rick Grant
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NOTABLE QUOTES

- Smart is when you believe half of what you hear. Brilliance is when you know which half.
— Robert Orben
- Research is what I'm doing when I don't know what I'm doing.
— Werner von Braun
- Some people think they can and others think they can't, and they're probably both right.
— Henry Ford
- A scientist is a curious man looking through the keyhole of nature, trying to know what's going on.
— Jacques Cousteau
- A little inaccuracy sometimes saves tons of explanation.
— Saki

— Saki

— E.T.



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THE REAL DEAL

Dairy farmers usually take more care in selecting corn hybrids than they do for alfalfa and grass varieties; some seed corn catalogs are so glitzy it's a wonder they don't have a centerfold. (A comment, not a suggestion!) The focus on corn may seem to be a questionable decision given that while corn is an annual, alfalfa-grass stands usually last 3 to 5 years so you'll have to live that long with the choices you make. However, until recently there wasn't a lot of excitement in alfalfa variety selection; leafhopper-resistant alfalfa provides insect resistance but at the expense of a bit of yield potential vs. non-resistant varieties, while multileaf alfalfas look pretty but offer little improvement in yield or quality.

Now, however, there are several types of alfalfa combining competitive yield with higher quality, including both genetically modified (GM) and conventionally-bred varieties. The higher quality is primarily achieved through reduced lignin content, though at least one alfalfa variety appears

to be higher in digestibility but with normal lignin %. After decades with seemingly little progress, these alfalfa varieties are worth considering as you plan 2019 forage seedings. There's no "one size fits all" for alfalfa since soils, seed mixtures and forage management differ among farms. However, with several types of high-digestibility alfalfa varieties to choose from, most farmers should be able to find one to fit their situation.

Then there's forage grass selection, a particularly important consideration here in the Northeast since over 80% of alfalfa is seeded with grass. As many years as Roundup Ready alfalfa has been on the market you might expect the % of alfalfa seeded with grass to have decreased considerably, but farmers in the Northeastern U.S. are a stubborn lot, holding fast to what seems to be working for them. Meadow fescue is higher in fiber digestibility vs. other cool-season grasses and should be the "go-to" grass

for many if not most farmers seeding alfalfa-grass. Cornell University research has found meadow fescue to be higher in NDF-d than other grasses at all stages of maturity, from early boot through heading.

A seed mixture of meadow fescue and a high-digestibility alfalfa variety has the potential of resulting in higher milk production in every ton of hay crop forage you harvest and feed. Your alfalfa seeding rate will depend on a variety of factors including germination %, seed coating (if any), and seedbed preparation. With good management 12-14 lbs./acre of pure live alfalfa seed should be adequate. The meadow fescue rate depends to some extent on the weather — cool and moist greatly increases germination % — so don't go too heavy on the grass; I'd suggest 4 lbs./acre, perhaps dropping to 3 lbs. if seeded early into moist, fine seedbed.

— *Ev Thomas*
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DO YOU HAVE A BRAND?

Growing up in Texas, one thing I learned was that a brand for a cattle ranch is very important. It's a means to identifying your cattle, as well as being an identifier for a particular ranch and what it stands for. In the modern cattle industry a brand still means a great deal, but the development of technology such as the internet and social media has allowed us to develop our brand past a symbol we put on our cattle. With massive amounts of information at our fingertips, we can find out about nearly anything. This gives us an opportunity to create our brand for our operations whether beef, dairy, or other livestock with the intent to reach a wider audience. It allows us to show our operations in a positive light and demonstrate how much we care for our animals. All producers know that the most productive animals are the happy and healthy ones. Now is the time to take

advantage of all the resources that social platforms have to offer and create a brand that shows our side of the story.

There are multiple methods that can be used to develop your brand such as a blog, social media, or white papers. In the book "Soft Skills for a Flat World" by Stephen Manallack, he explains the 4 C's (content, context, connection, and community) in relation with the age of the internet and technology. He explains that the content is the information you provide; for example, this can be a tutorial or a virtual tour of your farm. Context is providing content of relevant information at the appropriate time that can be useful to your audience. Connection is how you connect with your audience whether through a blog or social media. Lastly, community are the people who are connected to your operation by

common interests. This community can be people around the world who follow you, because of the information you are providing. Using these basics, we can start to build content that will reach people at the right time and build your following.

Are you going to take control of your brand and how people see your operation? While this may not be a skill that most producers use on a daily basis, it's becoming necessary to combat all the negative messages about animal agriculture. There are very good examples of producers on social media and the internet that have developed their brand and taken control of their story such as Dairy Carrie and New Mexico Milkmaid. Now is the time to tell your story.

— *Michael Miller*
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WHAT'S HAPPENING ON THE FARM

Hello! My name is Alexandra Banks and I'll be joining the team as the new year-long dairy intern. This past spring I graduated from the University of Maine in Orono with a bachelor's degree in Animal Science and a concentration in Pre-veterinary studies. I grew up on a small, family farm in a rural town in Maine where we have raised beef cows, pigs, chickens, turkeys, and the occasional sheep or goat.



So far, we have experienced the busiest fall calving season, with 69 calves born in August, 50 in September, and 27 so far in October (6 more due before the month is over and another 25 due in the first two weeks of November). We were at full capacity in our calf hutches - 75 of these 146 calves were heifers.

Growing up I've always been around farm animals, but the dairy lifestyle is relatively new to me. My first experience with milking cows was when my father decided to buy a single milking cow for our family; she was an old Jersey/Guernsey cross and we milked her by hand! Once I graduated high school, I drifted away from farming for about a year before I realized how much of a hole it had created in my life, so I switched majors and went back to the cows that I loved so much. I started at the University of Maine in the fall of 2015 and after I took all the basic classes I was able to take a class that solely consisted of working on the school's dairy farm. That was where I truly fell in love! My school was milking a whole 27 cows, and through this class I learned even more about milking cows, calf care, herd health, etc. From there I never left, I continued

on to work at the farm during all the school breaks and summer vacation, and then continued on to take the second level of this class which had more of a management role.

Since graduating, I came to Miner Institute to work as one of the Summer Interns and ever since I showed up here I knew that I wanted to stay. Miner Institute is so much larger than any farm I've ever worked on, and it's been fun finding that there are many similarities amongst the differences between large and small farms. Over the course of the summer, I learned so much and am very excited to continue to work here and learn even more over the course of the next year! I'm excited for this opportunity because I feel like it will open a lot of doors for me in the dairy industry with newfound skills in dairy management and herd health, and I look forward to using them as I pursue a career as a large animal veterinarian.

While we were busy in the barn, our crops team was hard at work bringing in the corn harvest. Yield varied quite a bit field by field and we are adding up truck weights to calculate tons per acre in each field, in order to make decisions for planting in spring 2019. The cows are doing really well this fall – the herd is averaging 155 DIM and production is in the high 90s. We are hoping to maintain production and health as we transition in new forages.

Winter is close at hand, we have already had some small snow flurries. This will be my first winter in Chazy... I have been warned and have stocked up on winter gear! However, being from northern Maine, I've had my share of cold weather and am confident I can survive this cold winter too!

— Alexandra Banks
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Miner Institute's Morgan Horses
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DAIRY DAY AT MINER INSTITUTE

Wednesday, Dec. 5

10 am to 3 pm



AGENDA:

- 10:00-10:45 Dr. Rick Grant, Miner Institute: A Tale of Two Fibers: Optimizing peNDF and uNDF
- 10:45-11:45 Dr. Mike Van Amburgh, Cornell University: Colostrum as a communication vehicle to the calf.
- 11:45-1:00 Lunch and Door Prizes Hot lunch is available for \$5.
- 1:00-1:45 Dr. Mike Van Amburgh, Cornell University: Nutritional and economical management of heifers.
- 1:45-2:15 Mike Miller, Miner Institute: The Next Step in Corn Silage Hybrid Evaluation: Fiber and Starch Yields
- 2:15-3:00 Dr. Heather Dann, Miner Institute: Milk fatty acid testing - useful for the herd, the group, and the individual cow

Dairy Day is free and open to the public. Pre-registration is encouraged.

For more information contact: Wanda Emerich at 518-846-7121, ext. 117 or emerich@whminer.com

Miner Institute is located at 586 Ridge Rd. Chazy, NY. Travel on Miner Farm Road, Route 191- 1 mile west of Interstate 87, exit 41. Travel time is approximately 1 hour south of Montreal, 20 minutes north of Plattsburgh, NY, 1.5 hours from Burlington, VT, or 3 hours north of Albany, NY.

2ND ANNUAL HAR EDUCATION FUND PRIZE TO BE AWARDED AT DAIRY DAY

In 2018, Miner Institute honored past President, Harry A. Randy (HAR) by using funds established after his untimely death in 1991 to award a Dairy Day attendee with a spot on the trip to the western United States with our Advanced Dairy Management students. It was great that the first recipient of this award, Michael Duncan, a dairy farmer from Ormstown, Quebec, remembers Harry's passion for dairy cows and working with dairy producers. This past February,



Michael traveled with our students and some staff to visit dairy farms in the Central Valley of California, toured San Francisco, and spent a couple days at the World Ag Expo in Tulare, CA. Michael described the experience as “the trip of a lifetime”, experiencing a visit to the largest dairy he had ever seen and seeing different types of agriculture from nut farms to vineyards. Michael says, “For anyone given the chance to tag along with Wanda [Emerich] and the Advanced Dairy Management class, Don't miss it, you will not regret it.” This year, our students are headed to the Western Dairy Management Conference in Reno, NV toward the end of February and will be taking a couple of extra days to visit farms in Oregon. Be sure to attend Dairy Day this year for an opportunity to join them!

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Closing Comment

To err is human; to blame it on someone else shows management potential.

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