

# FARM REPORT



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## FROM THE PRESIDENT'S DESK: ENRICHING YOUR COWS LIFE?

Recently I was flying back from a meeting and the person beside me worked for a zoo. As we chatted he got onto the subject of environmental enrichment. As you might know, environmental enrichment is important for the well-being of zoo animals and has long been used. He asked me about dairy farms, and I said it wasn't something you would ordinarily think about. But with confinement systems is enrichment something we ought to consider more?

This past week I spent some time looking through the literature on the subject and found a great review paper on environmental enrichment for dairy cows housed indoors (J. Dairy Sci. 2016. 99:1695-1715). Turns out there has been some research on the topic, although more questions remain than solid answers at this point.

Over the past decade, research has begun focusing on the concept that indoor housed cows face the challenge of occupying extended periods of time with a limited range of possible behavioral patterns. Under these conditions, the question naturally arises whether there are possible benefits of environmental enrichment to improve the cow's biological functioning (i.e., health, fitness, reproductive performance, etc.), help cows cope with environmental stressors, reduce frustration, boost the fulfillment of behavioral needs, and encourage more positive affective states (is cow anxious or calm, feeling pain or pleasure?).

It turns out that enrichment can be social, physical, sensory, or nutritional. A key question would be: What, if any, of these enrichment strategies would be practical and effective on commercial dairy farms? Examples could include enriching the maternity area by providing a secluded area to meet the cow's desire to hide when calving. Work at Miner Institute has shown some benefits for both the dam and the calf – more work is underway in collaboration with Ohio State University. Another would be access to exercise lots where cows can engage in physical activity. Cows, especially those housed in tie-stall barns, show improved hoof and joint health, less lameness and mastitis, and fewer aggressive behaviors. Another common enrichment focuses on tactile stimulation – use of grooming brushes that take the place of a cow rubbing on trees or other surfaces.

There is still a lot to learn as evidenced by a paper published last month where use of grooming brushes (and) or mirrors did not lessen indicators of stress such as accelerated heart rate or vocalizations when the cow was isolated for 30 minutes (2019. Appl. Anim. Behav. Sci. 211:1-8). Isolation from herd mates occurs routinely on dairy farms – hoof trimming or hospital pen, for example – and there may be a role for enrichment, but to date the research is equivocal.

See **ENVIRONMENT**, Page 4

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# “SPEAK FRIEND, AND ENTER”

The rumen of a cow is a fickle thing. It's ever-changing throughout the day, and is home to a multitude of microbes, protozoa, and fungi that produce a variety of products, some bad and some good. The rumen environment is surrounded by a lining, very similar to your skin, called an epithelium. The arrangement of cells is different between different sections of the digestive system, and can vary from animal to animal. Within the rumen they're arranged in layers, like bricks in a wall. Each layer has a different function that works together to allow the rumen to be highly selective in what it lets through and what is keeps out. This barrier is an interesting dynamic between allowing nutrients to cross while simultaneously blocking harmful things from getting into the animal. So, what are the negative effects to the cow if this barrier fails?

A symposium review by Aschenbach et al. published in early 2019 goes into depth about the importance of the ruminal epithelial barrier for a healthy and productive cow. I'll focus on the characteristics of the rumen epithelium, how it recovers from insult, and several feeding strategies to support epithelial health that were discussed in the article.

The rumen epithelial barrier has been constructed as a gatekeeper to absorb important nutrients, but also to keep harmful things from leaving the rumen. The microbiota of the forestomach reigns supreme when it comes to converting carbohydrates in the diet to volatile fatty acids (VFA). These VFAs can then be utilized by the cow as energy. After they pass through the rumen epithelium they're taken into the bloodstream. The rumen is also a key organ in the absorption of important electrolytes such as sodium, chloride, magnesium, and calcium. These nutrients are channeled through the layers of the epithelium, out of the rumen, and into the body through transcellular absorption using intercellular bridges like a tunnel. The rumen epithelium has a way of recognizing which nutrients are good and allows them to proceed.

Think of Lord of the Rings: Fellowship of the Ring, when the Fellowship was stopped outside the Doors of Durin. To open the door and proceed through Moria, a password was needed: “Mellon” (meaning friend). Nutrients in the rumen speak “friend” to the rumen epithelium, and are allowed to pass through.

Not everything within the rumen is beneficial to the animal. The same microbes that produce helpful products to the cow can also produce toxic molecules, or they themselves can be harmful if they cross the rumen epithelium. The rumen epithelial barrier has been constructed to protect the body from harmful particles and microbes using a keratinized layer of cells and tight junctions. The keratinized layer of cells acts as a mechanical barrier, and tight junctions are a specialized connection between two adjacent cells (like Velcro) that prevent passage of toxins and microbes from crossing. Like many walls and doors, there can be failure due to mechanical malfunction which allows the harmful products and microbes to escape. Even the Great Wall of China was eventually scaled by the Huns.

There is substantial evidence throughout the literature supporting the theory that grain-rich diets and subacute ruminal acidosis (SARA) disrupt the protective function of the rumen epithelium. It's been demonstrated that acidotic stress (pH < 5.8 for > 4 hour per day) results in the depletion of key protective factors in the rumen epithelium's cell layers. This leaves the protective lining, and the animal, more exposed to inflammation and cell damage. Other studies have shown that there is an increase in permeability (it becomes leaky) suggesting that there is a failure in the tight junctions, almost like there are holes in the wall allowing ruminal contents to escape. Recently it's been shown that the decrease in pH within the rumen also decreases the absorption of electrolytes and VFAs across the rumen epithelium.

Increased permeability and decreased absorption occurs simultaneously, and exhibits a failure in the protective barrier to discriminate between what is good and what is bad. This results in inflammation in the animal when toxic metabolites and microbes are released from the rumen.

When the pH returns from an acidotic level (pH < 5.8), the epithelium begins to recover. The initial response of the epithelium is to further increase permeability. This is generated by removing the top layer of cells that are dead which initially opens the connections between cells more before the cell layers are built up again--essentially creating a scab and going through the healing process (remember, similar to your skin). While this is occurring, the absorptive ability of those cells is limited until new cells grow to make a healthy epithelial layer again in which nutrients can be absorbed. The degree in which the absorptive capacity is affected depends on the severity of the challenge and the duration of the event. The time it takes for the rumen epithelium to repair is hard to quantify in dairy cows.

The challenge is to make the rumen, which has evolutionarily adapted to slow fermentation of poor quality feed, efficiently utilize a highly fermentable diet that maximizes her potential for high milk production. There is a balancing act that must occur between physically effective fiber and rumen degradable starch, that targets a healthy rumen ecosystem while meeting her extremely high energy demands.

In conclusion, the rumen epithelium is an integrated system that allows the passage of nutrients through the layers of the epithelium while blocking the escape of toxic compounds and microbes. This system can be challenged by high grain diets and the resulting incidence of SARA. The recovery of this system is not automatic and takes time, but there

See **RUMEN**, Page 3

# INVASIVE SPECIES ... WHAT'S COMING ON YOUR LAND?

A couple of years ago the natural gas pipeline that passes through my home farm in Georgia, Vermont was being expanded. State environmental officials were onsite to ensure the construction crews were abiding by their regulations to reduce erosion and runoff from the work site. One regulation required the spreading of at least 6 inches of chopped hay or straw over any open ground if the site was not going to be worked on for over a 48-hour period...i.e. truckloads of mulch hay were needed nearly every weekend to cover the open ground that was in our forest land and some of our fields. My husband happened to be at the site when one of the first truckloads of hay were delivered and asked where they were getting the hay. Western Pennsylvania. My husband turned to the state environmental official and asked if they weren't concerned about potentially bringing invasive species into Vermont, because my husband certainly was and didn't want that hay chopped onto our land. Evidently it wasn't anything the state folks had considered and soon phone calls were being made to Montpelier. In the end our hay barn was cleared of old hay and neighboring farms got good deals clearing mulch hay out of theirs.

So, how much of a risk was there to transport hay from one state to another? This summer I attended a meeting hosted by Mycogen Seeds where I heard Greg Comeau talk about herbicide resistance. He shared a story about a farm in the Finger Lakes region of New York State where glyphosate-resistant marestalk, also known as horseweed or Canada fleabane, showed up in a 20-acre field. It was not clear how it came in but no other farms in the area seemed to have any issues. By the next year, 500 acres were impacted. Roundup-resistant weeds are just one concern but obviously there are others including insects that may be brought in unintentionally.

From our experience, it's clear that we can't rely on our state or federal government to protect our land from the introduction of invasive species. We need to be proactive. And if needed, say, "No...not on my land". As I traveled to the Finger Lakes this past week, I saw an area where natural gas line work was being done and it was passing through a field. I hoped the farm owner was asking questions.

— Katie Ballard  
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## RUMEN, Continued from Page 2

is still little known about this process. Maintaining the balance between physically effective fiber and rumen degradable starch is the best way to support the health of the epithelial barrier. Additionally, feed additives can be implemented that stimulate the rumen ecosystem and minimize the release of toxic compounds. Other studies have suggested adding rumen available thiamine and yeasts because of their anti-inflammatory action.

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# DON'T MESS WITH MOTHER NATURE

(*Editorial commentary*)

In 1958 Mao Zedong, Chairman of the Chinese Communist Party, declared war on sparrows, claiming that they were eating much-needed grain. Sparrows were declared to be "public animals of capitalism". The Great Sparrow Campaign reportedly involved 3 million people who banged pots and pans, preventing the sparrows from landing until the birds died from exhaustion. Bounties were offered for dead sparrows, and untold millions of sparrows were killed during this campaign. It ended in 1960 when ornithologists pointed out that not only did sparrows eat grain, but they also ate a lot of insects. But by then it was too late: With fewer sparrows to eat insects, locust populations exploded and rice yields decreased. Combined with other ecological problems caused by "The Great Leap Forward", this resulted in a famine during which up to 45 million people died of starvation. Don't mess with Mother Nature.

It's useful to consider the above since some politicians have been suggesting that livestock flatulence is a serious environmental problem, with dairy cows the major offenders. However, what other impacts would result from eliminating an entire agricultural industry?

As I used to tell my children: Actions have consequences...and sometimes the consequences are far from what were expected.

— E.T.

# NUTRIENT MANAGEMENT RESEARCH AT MINER INSTITUTE

My name is Laura Klaiber and I was recently hired as the Nutrient Management Researcher at Miner Institute. While this is a new position for me, I've been a member of the research program at Miner Institute since 2008. However, my first introduction to the Institute was through the Applied Environmental Science Program in 2007. The program is an immersive educational experience that is held here every fall semester in conjunction with SUNY Plattsburgh and was one of the highlights of my undergraduate experience.

Shortly after I graduated with a B.S. in Ecology from SUNY Plattsburgh I was hired as a research technician and quickly got the bug for research and a passion for enhancing the sustainability of agriculture. Although I had no prior farming experience, I grew up just a couple hours south of Chazy on the border of Warren and Washington counties where farms were a large part of the landscape. I was drawn to the Environmental Sciences as an undergraduate because I wanted to contribute to the preservation of the natural resources that make our region so unique. Agriculture is an important component of both the landscape and economy of our region, and since the beginning I have felt extremely lucky

for the opportunity to be involved in a research program that works to benefit both.

When I began working here in 2008, the nutrient management research program wasn't as developed as it eventually became under the leadership of my predecessor, Eric Young. This provided me with a great opportunity in my first few years as a research technician to work on a variety of research trials and gain indispensable knowledge of the daily activities and practices that take place on a dairy farm. Many hours spent working on the dairy nutrition and welfare trials in the dairy barn and crop trials in the fields also gave me a strong appreciation for the work ethic and dedication that one needs to be a successful farmer.

In 2013, I began my Master's degree in Plant and Soil Science at the University of Vermont. My research focused on evaluating the impacts of tile drainage on erosion and phosphorus losses from experimental runoff plots managed as corn for silage. Following the completion of my M.S. in 2016, I started back at Miner Institute full-time, managing our "edge-of-field" projects that investigate how different management practices impact water movement and nutrient losses from crop fields.

Now that I've been entrusted with the reins of the nutrient management research program, I'm excited to continue improving our understanding of how practices such as tile drainage impact water quality, investigating how to simultaneously maximize crop production and soil health, and overcoming the challenges created by increasingly extreme and erratic weather patterns. I also find myself back in school at UVM once again, now pursuing my doctorate. Returning to graduate school will be an excellent opportunity to learn and grow as a research scientist and to meet and work with those in Vermont who are facing many of the same challenges as we are in New York.

I look forward to facing the challenges ahead of managing the dual priorities of environmental stewardship and farm viability and working towards innovative solutions that will benefit both. I am lucky to be working with the dedicated team here at Miner Institute and look forward to collaborating with the farmers, researchers, extension agents, industry members and everyone else who is committed to moving agriculture forward in all aspects.

— Laura Klaiber  
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## ENVIRONMENT, Continued from Page 1

Most recently, researchers have even begun to focus on cognitive enrichment, based on evidence that farm animals are capable of more complex cognitive and emotional responses than previously thought. Whether providing cows with greater opportunity to use their cognitive ability to promote positive emotions

is hardly settled science – if it actually enhances well-being requires much more research to know.

Any enrichment practice needs to have a functional significance to the animal. And importantly, we will need to consider the accessibility of the enrichment to

cows of varying social ranking and how competitive it is. Still, environmental enrichment appears to be a topic ripe for research and application on commercial dairy farms. Stay tuned!

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# GOALS FOR THE FARM

The approach of spring offers a good opportunity to think about ways to improve your farm. The list for the farm should be split into cattle, feeding, equipment, and forages then split up further into short term and long terms goals as shown in the table. Your goal list should be tailored to your operation. Start with small things because when left for later they can add up and begin to become problems. Some of the small things can be bunk management, scales, and equipment upkeep. Then think long-term such as equipment purchases and forage systems. This should be a team effort and by including all the involved personnel, will allow for a better goal list and an increase in accountability.

A short-term goal would be testing dry matter (DM) of forages at least 3 times a week, which can be built into the routine of the feeder. Dry matter of the forages can be variable especially if changing to a new bunk or following bad weather. Small changes in dry matter can cause large changes in the as-fed feed requirement. An example would be needing to feed 1,750 lb. of DM of corn silage: If the corn silage is 35% DM this would equate to 5,000 lb. as-fed, but if the DM is 30% then the actual pounds of DM in 5000 lbs. of feed is 1,500 lbs. and depending on the amount of buffer built into the load the cows could run out of feed. If the corn silage has starch content of 37% of DM and 39% of DM of neutral detergent fiber (NDF) then the load would be short 93 lb. of starch and 98 lb. of NDF.

Group	Short or long term	Goal	Date accomplished
Cattle	Short	Better foot bath	
Cattle	Long	Improve genetics	
Feeding	Short	Test dry matter 3x/week	
Feeding	Long	Reduce feed cost	
Equipment	Short	Grease all equipment	
Equipment	Long	Identify and purchase new tractor	
Forages	Short	Select hybrids with increased NDFd	
Forages	Long	Increase amount of homegrown forages	

List of short and long-term goals for farms.

These little things start to add up and intakes start to drop which will cause milk production to follow. Taking the time to make it part of the daily routine will allow for more accurate diet being mixed and fed to the cow.

Long-term goals take months to several years to achieve. One example is feeding more home-grown forages. The first step is to determine if your land base is large enough to increase forage production. If not, then plan for either leasing or buying more land. One of the most important steps in this process is deciding which crop varieties to plant. Forages provide fiber represented as NDF, and the quality of this forage will have large impacts on intake and milk production. Forage quality can be measured by NDF digestibility (NDFd) at 30 hours and the indigestible fiber represented as undigested NDF (uNDF) at 240 hours. The indigestible fiber will fill the rumen and limit intake. Corn

silage also provides starch and not only is starch content important but also the digestibility of that starch. So identifying a corn hybrid that provides good yields of digestible fiber is the key to maximizing intakes and performance. This takes at least one growing season, but when in place will help lower purchased feed cost.

With every new year comes the promise of making changes and finding areas of improvement, but this year let's make goals for the farm. Involving everyone on the farm to make goals will help with accountability and create enthusiasm to make the farm better. Whether short or long-term goals they should split into different categories for example cattle, feeding, equipment, and forages. During these low milk prices, we need to identify areas for improvement so the farm is around for the next generation.

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# GO WITH YOUR GUT

In the mood for an internet debate? Just mention the phrase “gut health”. Whether it be buying stock in probiotic yogurt, drinking apple cider vinegar, or developing a newfound affinity for kimchi or sauerkraut, there’s no shortage of opinions on best practices for developing and maintaining gut health. (The term used to reference most of these practices among the scientific community isn’t appropriate for this publication.) The gut houses approximately 70-80% of the immune system and is responsible for most initial immune responses. Think of the gut as the stage crew for Aerosmith; you don’t always see them working, but they’re making sure that the stars have what they need to perform to the best of their potential. I don’t know how Steven Tyler might feel about being compared to an immune cell, but I’d hope he’d be flattered. He should be, anyway. But I digress. Science is taking more of an interest in the role your gut plays in immune function, and developing research in the bipedal humanoid world is setting the precursor for new strategies and research in animal health.

Immunity comes in two forms; innate (natural) and adaptive (acquired). Innate immunity is carried out through your body’s natural defenses such as the skin barrier, stomach acidity, saliva, sweat and mucosal/lacrimal secretions (a runny nose or crying). These barriers are an initial line of defense for pathogens; if they happen to sneak past, cellular defenses take over. Just as Pac-Man goes after the ghosts, if an invading pathogen makes its presence known, these cells will immediately respond to the area of infection to combat it. Spiking a fever? That’s a sure sign your body is working to ward off some kind of intrusion. Adaptive immunity is developed through either active or passive transfer. Active

transfer of immunity occurs after immune cells come into contact with a pathogen and create a memory of it, either after you receive a vaccine or contract a disease such as the chicken pox. Passive transfer of immunity occurs when maternal antibodies are transferred to offspring in colostrum as well as across the placenta, and these antibodies are essential in setting the foundation for immune system development during the formative stages as well as protecting the infant during this time. It’s interesting to note that transplacental transfer of antibodies does not happen in cattle, which is why it is extremely important that calves receive colostrum.

So how does the health and structure of the gut contribute to the efficacy of the complete immune system? The GI tract is bombarded every day with all sorts of stimuli, and is the body’s first line of defense against pathogens. The GI tract must also constantly differentiate between commensal bacteria (normal microflora) and harmful pathogens in order to keep the immune system in balance. The epithelial cells found on intestinal villi are the core of immune system regulation and nutrient intake. The greater the surface area that these cells occupy, the better the performance and response of the GI tract. Immune cells are propagated in the lymphatic system, which is comprised of the thymus, bone marrow, and lymph nodes. Patches of lymphatic tissue also exist in the GI tract. When a harmful pathogen is detected, the densely populated lymphatic cells in the gut signal protective antibodies to move to the mucosal layer of the epithelium for more protection, as well as summon innate immune cells and antigen-recognizing immune cells (T and B-cells) to deal with the intruding

pathogen. The commensal bacteria in the gut are also vital to protection; not only are they an important factor in nutrient metabolism, their abundant presence makes it difficult for otherwise harmful bacteria to colonize. This is why it is recommended to eat probiotic-friendly foods after a course of broad-spectrum antibiotics compromises the microflora; if the levels of normal microflora get too low, harmful bacteria take the opportunity to populate and cause infection. The combination of these commensal bacteria and the epithelial cells working in harmony allow for the gut to perform its regulatory function.

The nuances of the gut microflora are complex, and more research is still needed to understand exact mechanism of the gut with regard to disease prevention. However, the importance of gut health for both animals and humans is simple; to protect your gut is to protect your investment. A preventative rather than a treatment approach to metabolism performance and diseases saves time and money, as well as reduces the need for antibiotic use. There are many economical and practical dietary strategies you can employ on your own farm to set your herd up for ideal gut health. Proper diet formulations are a good place to start; for example, making sure that the diet calves receive after colostrum is properly formulated to best stimulate the development of their gut microflora, and diets for cows are appropriately balanced so as not to impede the function of the gut and slow down metabolism. As always, consulting with your dairy team can help you determine best practices for your farm. Your gut knows what’s best, so don’t be afraid to trust it!

— Cari Reynolds  
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**Is there something you would like to know more about?**  
Send Farm Report article suggestions to Rachel at [dutil@whminer.com](mailto:dutil@whminer.com)

# TRAVELS WITH EV: GETTING THERE IS NOT HALF THE FUN

Last month following a talk at the Great Lakes Dairy Conference in Frankenmuth, Michigan I took a taxi for the 30-mile trip to the Saginaw airport. The ride was more eventful than expected when the taxi's engine overheated and I had to change taxis at an Interstate highway exit. This was two days after my inbound flight from Detroit to Saginaw was cancelled due to an impending ice storm, and I had to have a taxi drive me 100 miles from Detroit to my hotel in Frankenmuth. I'd left a day earlier than planned just to avoid the ice storm which seemed prudent--until Delta Airlines cancelled both my Richmond-to-Detroit and Detroit-to-Saginaw flights while I was sitting at the gate in Richmond waiting for the flight to Detroit! Delta had rescheduled both flights for the following day, so I had to have the gate attendant rebook me on the Richmond-Detroit flight that it had just cancelled. Can you see why whenever possible I prefer driving?

On a more serious note, attendance at the dairy conference was far less than normal, and only partly due to the weather. Farm milk prices are very low but about \$2/cwt lower in Michigan than elsewhere, so farmers have hunkered down, curtailing expenses wherever possible. Unfortunately, they're going to have to wait awhile since dairy economists don't expect milk prices to improve much until the second half of 2019. Even so it may be quite a while before the mailbox price reaches \$20.

— *Ev Thomas*  
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## NOBODY ASKED MY OPINION, BUT...

...the guy who discovered milk; exactly what was he doing with the cow?

...I've been repeating the same mistakes in life for so long now, I've started calling them traditions.

...there are two kinds of people who don't say much: those who are quiet and those who talk a lot.

...one thing I learned early in working with dairy farmers: Never stand behind a coughing cow.

## NICKELS AND DIMES

As silage processors became common on farms there was a popular rule-of-thumb regarding the recommended processor roll spacing for corn silage: "Start at a nickel, end at a dime". Suggesting that when the crop is about 32% DM use a processor clearance of 3 mm (the thickness of a nickel), and as the corn continues to mature to 35% DM close the spacing to 1 mm (the thickness of a dime). Easy to remember... but wrong. That's because a nickel isn't 3 mm thick, it's 1.95 mm, nor is a dime 1 mm thick — it's 1.35 mm.

However, some of us advising farmers may have unwittingly bumbled our way to a good recommendation. That's because assuming a proper whole plant maturity of 32-35% DM, farmers should probably start chopping at a 2 mm processor roll spacing. If the crop is much less mature than 32% DM it shouldn't be processed at all: Research has shown much higher effluent losses when dough stage corn is processed. So leave those dimes in your pocket; a nickel's thickness is a good place to start, and then closely monitor the crop as it comes off the truck or dump wagon, decreasing processor roll clearance as needed. The fuel and power requirements needed to chop at 2 vs. 3 mm are small; most of the power is needed simply to run the chopper. Pay close attention to processor roll wear, remembering that the wear probably won't be even across the roll. Even a 1 mm spacing won't do the job with badly worn rolls.

— *E.T.*



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# FOLIAR FERTILIZATION FLOPS... AGAIN

Recent research at Ohio State University found that foliar fertilization of alfalfa — applying a low rate of liquid fertilizer to each of several cuttings — had no significant impact on yield or forage quality. This isn't news but simply confirms what most agronomists have been saying for decades: That field and forage crops can't take up enough foliar-applied nutrients to make the practice worth the time and effort. A possible exception could be to correct a micronutrient deficiency, but we almost never see micronutrient deficiencies that can't be corrected by normal fertilization applications. And seldom are there micronutrient deficiencies in alfalfa except for boron. Back in the 1970s Cornell University soil fertility professor W. Shaw Reid told me that crop uptake of foliar-applied nutrients is limited to about one pound of nutrient per acre, and therefore are an ineffective way to fertilize forage crops. Yet proponents of foliar fertilization — a population composed almost entirely of the purveyors of fluid fertilizers (gee, what a surprise!) — continue to recommend the practice. So while the results of the Ohio State research isn't anything new under the sun it's affirmation of what most of us have known all along.

— E.T.

# THEY'RE AT IT AGAIN

By "they" we mean those who, being smarter or more knowledgeable than the rest of us, have decided that it's their job to tell us what to eat, or more importantly what *not* to eat. Once they told us to avoid or strictly limit red meat consumption, but now we know that red meat eaten in moderation is part of a healthy diet, and indeed that a vegan diet is less than ideal. Now a professor at Harvard University has decided that the "proper" serving size of French fries is 6, referring to them as "starch bombs". Previously, USDA stated that a serving of French fries is 12 to 15. This may be good advice if you eat fast food including French fries several times or more a week. But if fast food the exception and not the rule, when you order fries with your burger whether you eat 6, 12 or 20 will make no difference in your overall health. As the poet Ralph Waldo Emerson said: "Moderation in all things, especially moderation."

— E.T.

## HERD HEALTH AND NUTRITION CONFERENCE APRIL 8-9, 2019



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- Dr. Frank Mitloehner, University of California-Davis
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# WHAT'S HAPPENING ON THE FARM

At the end of February I had the experience of being able to accompany the Advanced Dairy Management students on a trip to the Western Dairy Management Conference in Reno, Nevada. On the way there, we took a detour to Tillamook, Oregon where we had the opportunity to meet up with Dr. Joe Klopfenstein and students from the Oregon State Vet School to tour Oldenkamp Dairy farm, Cal-Mart Jersey Farm, and the Tillamook Creamery.



Oldenkamp Dairy is a 360-cow robotic milking facility milking primarily Jerseys and Red & White Holsteins. They switched to the Lely robotic milkers and Vector feeding system only 6 months ago and they said that they were enjoying it so far, but were also still learning about them and everything that they were capable of. The cows are currently being milked 3.1x/day and fed 28 times per day with the automated systems. Jerseys went through the robotic milker with a little more frequency than the other cows.

Cal-Mart Jersey Farm is a 920 cow Jersey herd milking in a 32-cow rotary parlor. Cal-Mart Jersey Farm is unique in that it is one of the national leaders in Jersey Genetics, so many of their bulls go on to become sires for A.I. in addition to raising about 40 ET heifer calves/month. Calves are raised on the farm from birth to 6 months, then move to a heifer grower. Much of their manure is cooked for 3 days in a tumbler and sold to local nurseries. The Martin Family started milking in 1906 and moved to Tillamook in 1995 from California.

Between visiting the two dairies we stopped at the Tillamook Creamery for lunch and a quick self-guided tour. We got to watch and learn about the process of making cheese as well as eating a delicious meal and having some local ice cream for dessert! Along with the cheese factory, the delicious food, and the gift shop, they also have a “Farm Exhibit”

where they can educate the public on farming and proper animal care. In this exhibit people could learn how to milk a cow with a milking unit along with feeding a calf in a hutch. While visiting, we learned that Tillamook Creamery is farmer owned and that pretty much all of the milk in the Tillamook County goes to the Creamery to be processed into cheese or ice cream.

After spending a few days in Portland and Tillamook Oregon, we travelled to Reno, Nevada to attend the Western Dairy Management Conference. This conference was three event-packed days that had us listening to speakers from all over the country, and then networking with different companies at their events in order to learn about their products and businesses. This year, a number of the speakers spoke about public perception of the dairy industry and how we should work to promote dairy and to speak to the majority of people who are willing to listen, not the ones who are screaming about the perceived negativities of dairy farming. We should be able to change the minds of these people that are willing to listen by providing the knowledge that we, as dairy farmers, have shared values with our consumers, we want our animals to have the best lives they can and we take care of them so that they can take care of us. Younger consumers have more of an interest in where their

food is coming from and with a vast amount of opinions in the world, a lot of them have been being confused as facts. If we as farmers want to spread the truths about dairy farming then we should not only educate the consumers, we should listen to what they are saying in order to find out what their values are, and then embrace their skepticism, while providing them knowledge on your values, and how they are similar: on community, health, and the environment.

While we were in Portland, we had the opportunity to go on a food tour and we were joined by a couple from San Francisco. One of them works as an event planner for a large foundation and he was excited to learn from us some things about the dairy industry in general and how the information he received from us was different than the information he had received previously. At the end of our time together, he informed us that talking with us made him feel better about the dairy industry and that he would definitely be putting more dairy products into his menus for his events, (a small event for him is 300 people, and he is in charge of all of the menus). My mind kept going back to this as multiple speakers spoke about talking to people and sharing our knowledge and values and that maybe we couldn't change everyone's minds, but we could start with a few people and eventually more and more will follow!

This trip provided me with a lot of exciting experiences and, as someone who has never really had the opportunity to travel before (my first and only time on a plane before this was going to the National Dairy Challenge in California last April representing the University of Maine-Orono), I am incredibly grateful to the Miner Institute for providing me with this amazing opportunity.

— Alexandra Banks  
banks@whminer.com

# EQUIDAY

Saturday, March 16, 2019

*FREE and open to the public!*

9:00 – 9:30 Registration & Refreshments

9:30-10:45 **Equine Metabolic Syndrome**

*Dr. Jane Manfredi, Associate Professor at MSU College of Veterinary Medicine*

10:45-11:45 **Soft Tissue Injury Rehabilitation**

*Dr. Jane Manfredi, Associate Professor at MSU College of Veterinary Medicine*

11:45- 12:15 Lunch Break – available for \$5.00 in the cafeteria annex

12:15 - 1:00 **Adirondack Tack's annual fashion show!**

*Carol Tetreault, Adirondack Tack*

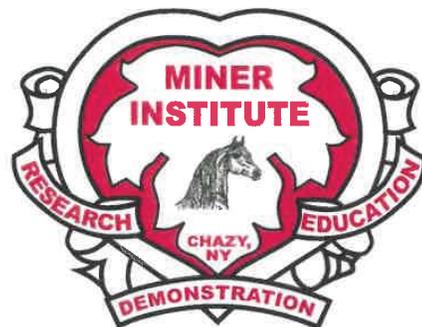
1:00 – 2:15 **The Music of Equine Movement**

*Jeff Morse, Trainer at Green Meads Farm, Richmond, MA &  
Tamara Healy, Music Teacher, Johnstown, NY & owner of Classic Carriage Service*

2:15 – 3:00 **Trailer Safety Check-up**

*Howard Newton, Key R-D Trailer Sales, Plattsburgh, NY*

3:00 Door Prize Drawing- must be present to win.



*BERC Auditorium at Miner Institute*

*586 Ridge Rd., Chazy, NY 12921*

*www.whminer.org*

*information: 518-846-7121 x120*

*or lassell@whminer.com*



# SURVEY for *Farm Report* Subscribers and Readers

Periodically we survey our readership to determine how we're doing: What you like about the Miner Report, what you think needs to be changed or improved, suggested topics, and general comments. We value your opinion— Please return this survey.

\* Alternately, you can fill out the survey online <https://www.surveymonkey.com/r/F78KPHG>

1. Which of the following best classifies your occupation?

Farm Owner \_\_\_\_\_ Farm Employee \_\_\_\_\_ Agribusiness \_\_\_\_\_ Veterinarian \_\_\_\_\_  
Educator \_\_\_\_\_ Nutritionist \_\_\_\_\_ Lender/Banker \_\_\_\_\_

Other (What?) \_\_\_\_\_

2. How long have you been reading the *Farm Report*?

Less than 1 year \_\_\_\_\_ 1-5 years \_\_\_\_\_ 5-10 years \_\_\_\_\_ Over 10 years \_\_\_\_\_

3. How do you receive your copy of the *Farm Report*?

Email from Miner Institute \_\_\_\_\_ U.S. mail from Miner Institute \_\_\_\_\_

I read someone else's copy \_\_\_\_\_ Sent to me by someone else \_\_\_\_\_

4. Rank each of the following *Farm Report* topics on a scale of 1 to 5, with a 5 rating being most important.

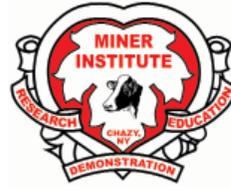
Forage \_\_\_\_\_ Nutrient Management \_\_\_\_\_ Reproduction issues \_\_\_\_\_ Nutrition \_\_\_\_\_  
Farm Management \_\_\_\_\_ Labor \_\_\_\_\_ Humor \_\_\_\_\_ Weather/Climate \_\_\_\_\_

5. What length do you prefer for *Farm Report* articles?

Less than ½ page \_\_\_\_\_ ½ to 1 page \_\_\_\_\_ > 1 page \_\_\_\_\_  
Doesn't make much difference \_\_\_\_\_

6. Please let us know if you have article topic suggestions.

7. Comments, suggestions, etc.



# NOTICE: THIS PROPERTY IS A FARM

**FARMS HAVE ANIMALS.  
ANIMALS MAKE:**

**FUNNY SOUNDS,  
SMELL BAD, AND  
HAVE SEX OUTDOORS  
UNLESS YOU CAN TOLERATE:  
NOISE, ODORS AND OUTDOOR SEX  
DON'T BUY PROPERTY  
NEXT TO A FARM!**

**YOUR MARCH  
FARM REPORT IS HERE  
ENJOY!**

The text at left is something The Crops  
Dude came across that he thought might be  
appreciated by *Farm Report* readers.

## *Closing Comment*

One good thing about being wrong is the joy it brings to others.

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

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