FARM REPORT

In This Issue:

JOIN US FOR AN OPEN HOUSE SATURDAY, AUG. 10 noon to 4 p.m.

FROM THE PRESIDENT'S DESK:

OPEN 24 HOURS-A-DAY

Increasingly, I see fast-food signs advertising that food is served 24 hours-a-day, ensuring that no one will go hungry regardless of the hour. Whether that's actually beneficial for humans is debatable, but keeping feed in front of cows throughout the day is critical if we hope to optimize feed intake, productivity, and herd health. With the continuing high price of feed ingredients, there is increasing pressure to feed our lactating cows for less feed refusals. Reducing the amount of feed left in the bunks each day makes economic sense because it is usually a net loss to the dairy. The goal increasingly has become – can I feed to a clean bunk and better manage the day-to-day feed intake of my herd? I suppose in theory feeding for zero refusals can improve overall efficiency of the feeding program, but in practice there may be substantial challenges.

First, there is always the consideration of total pen intake versus the feed intake of individuals within the pen. At the end of a 24-hour cycle the feed bunk may be essentially empty which makes for efficient management and little sorting on a pen basis – and perhaps you can safely assume that the dominant cows consumed all of the feed they needed when they wanted to eat. But, what about the subordinate cows in the pen? Did they really have the opportunity to eat when they wanted, and as much as they needed, if competition at the feed bunk was amplified by feeding to an empty bunk? A key question is: how many hours was the feed bunk functionally empty? Bear in mind that a cow's motivation to eat increases markedly after about 3 hours without eating – in other words, she is hungry.

See **FEED**, Page 9

Alumni Corner

DRAINAGE WATER MANAGEMENT: GIVING FARMERS CONTROL

My work here at Miner institute over the past two years has focused on evaluating the effects of a technology called drainage water management (DWM) using in-line water control structures (WCS's) to reduce phosphorus (P) loss. The technique allows farmers to raise the water table within a field by holding water back in the tile lines. The basic objective of the project is to compare P loss between freely –drained tiles and tiles managed under DWM. In addition to the field portion of this work, I conducted a series of laboratory-based experiments to simulate P leaching between freely-drained and DWM tiles, and to determine whether prolonged saturation might influence the loss of soluble and total P.

Tile drainage systems have proven to be a critical best management practice for improving soil conditions and crop yields/quality across in the US and many other countries. Here in NNY, tiling gives farmers more workable acreage, more trafficable soil, and reduces the risk of crop damage from flooding and ponding- assuming the tile system was designed, installed, and maintained properly. So why on earth fix something that isn't broken? On one hand there is the environmental concern; in certain settings, tile drains can potentially increase the leaching of nitrogen and P, and be transported to surface and/or groundwater. In Lake Champlain, phosphorus is considered to be the limiting nutrient causing algal blooms and eutrophication, which impact the ecosystems health and diversity, impair its aesthetic and recreational value, and can even produce harmful toxins. Though P is relatively insoluble, in high P testing soils or soils where manure is applied, P can be transported with tile drainage water flow and/or surface runoff.

The results of my field study have shown a reduction in P loss from DWM tile lines vs. free drained tiles ranging from 40% to 50%. This is consistent with the research being done in the Midwest using DWM to reduce N leaching. There has been little observed change in P chemistry between the two treatments, suggesting that the reduction is driven mainly by reducing the amount of water leaving the tile lines. Additionally, my lab experiments have shown that, in these field conditions and soil type, flooding the soil poses little risk to releasing more P into drainage water.

It appears as though DWM can help to reduce the amount of P leaching into Lake Champlain, and reduce the environmental impact of our agricultural fields. Another potential benefit of DWM, which is not discussed enough in my opinion, is that it can provide a simple yet powerful tool for farmers to directly manage the water table in their fields. It provides control over drainage intensity, allowing all of the benefits of open tile systems when needed but offers a mechanism to conserve water during dry periods, thus potentially reducing drought-associated crop production risk. In areas where tile drainage has been heavily utilized precipitation is not often in short supply, and the concern most of the time is how to get rid of water fast enough. Over the past two years, however, there have been a number of extreme weather events here in NNY, including severe flooding as well as long periods of drought like we saw last summer. If climate models for New York and New England are correct in their suggestion that extreme weather events will continue to increase in severity and frequency, then having the ability to manipulate water table levels and cope with both drought and flooding may become an invaluable tool for farmers.

In conclusion, the body of research for DWM implementation at the field scale has agreed that phosphorus and nitrogen loss can be reduced, which is a positive step towards protecting our water resources. Due to the more delicate balance with phosphorus and episodic flooding, more research needs to be done to evaluate DWM in different soil types. I believe that beyond the environmental benefits, the conversation with the agricultural community must include the agronomic benefits of having a direct water table management tool. If this shift in paradigm can occur, then DWM may begin to be seen as not at-odds with tile drainage, but a compliment to it, and its implementation seen as an obvious, inexpensive, and low risk choice for farmers.

— Justin Geibel

Justin just finished up a two-year graduate program at Miner Institute in May. He received his master's degree in soil science from the University of Vermont. He will defend his thesis in August.

4-HOUR AD LIBITUM FEEDING OF GROUP-HOUSED CALVES: TAKE ADVANTAGE OF CALF'S MEAL PATTERN

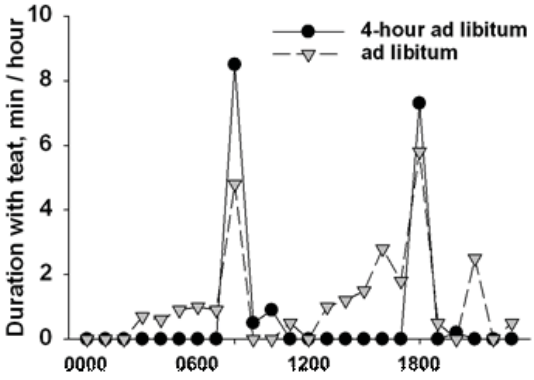
If dairy producers were asked what the recent hot topics are regarding calf management, group housing would most likely top the list. Free-access to liquid feed is one of the core components of group-housing systems compared with conventional restricted 2×feeding. The benefits of ad libitum feeding have been commonly recognized. For instance, it allows more frequent meals, reduces non-nutritive suckling, enhances pre-weaning growth rate, and saves labor. In order to avoid bacterial contamination throughout the day, acidified milk or milk replacer (MR) with pH around 4.2 seems the only option for ad libitum feeding. However, it also brings up certain inconveniences of labor for dairy farmers that use mob-feeders rather than automatic feeders. These inconveniences include: 1) the acidification process needs to be operated at a lower temperature, which requires a cool down of milk or reconstituted MR; 2) acidified milk or MR needs to be re-heated at feeding to avoid limitation of intake by low temperature; 3) Once loaded into the feeder, it requires periodic agitation around the clock to prevent separation.

Are there alternatives that both allow the calf to consume as much milk as ad libitum feeding and also avoid the inconvenience of feeding acidified milk or MR?

Two studies that looked at the calf's circadian behavior and meal pattern seem to give some valuable implications. One of the studies provided calves with ad libitum feeding of MR and measured the meal size of 5 periods in a day, when MR was refreshed at the beginning of each period. Two acidified MR targeted at pH 4.2 and 5.2 were tested in this study. Intriguingly, no matter what the pH values of MR were, calves consumed > 95% of their daily MR intake in two 2-hour periods at 0600 to 0800 and 1600 to 1800 (Table 1). In another words, even when MR was available throughout the day, calves only drink less than 5% during the remaining 20 hours of the day. In the other study investigating the calf's feeding behavior, ad libitum feeding was tested against an approach of 4-hour ad libitum feeding which only provides free-access to milk for 2 daily feedings each of 2 hours. It turned out that calves in 4-hour treatments were smart enough to predict feeding time and modified their eating behavior by staying longer time with teats during each feeding periods compared with ad libitum fed ones (Figure 1). Calves from both treatments consumed a similar amount of milk and had comparable growth rates.

Period, hour	# of hours	MR Consumed at each period as % of daily consumption	
		pH = 4.2	pH = 5.2
0600 to 0800	2	53.5	49.9
0800 to 1200	4	1.1	2.9
1200 to 1600	4	0.3	0.5
1600 to 1800	2	43.8	45.6
1800 to 0600	12	1.3	1.1
4-hour subtotal	4	97.3	95.5

Table 1. Percentage of acidified milk replacer consumed at each period of the day when fed ad libitum (modified from Hill et al., 2013).



Thus, here are the take-home messages of the two studies: 1) the eating time and meal pattern of calves may be primarily controlled by circadian clock rather than the availability of milk; 2) 4-hour ad libitum feeding approach may not unduly reduce the milk consumption as long as the feedings were given right at the hungry time of calf; 3) this approach may provide some opportunity for producers that seek to ease the inconvenience of feeding acidified milk through the whole day.

— Peng Ji
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** References:*
Hill, T. M., H. G. Bateman II, J. M. Aldrich, J. D. Quigley, and R. L. Schlotterbeck. 2013. Evaluation of ad libitum acidified milk replacer programs for dairy calves. J. Dairy Sci. 96:3153.
von Keyserlingk, M. A. G., F. Wolf, M. Hötzel, and D. M. Weary. 2006. Effects of continuous versus periodic milk availability on behavior and performance of dairy calves. J. Dairy Sci. 89:2126.

SILONOMICS

If you could spend one dollar and get eight back would you do it? For the minority of dairy farmers who don't use silage inoculants the answer apparently is "No." The inoculant business is highly competitive, with most companies claiming that their product is better than all the others. (You should be surprised?) Prices vary widely, from well under a dollar per treated ton to several times that much. Price is important but so is performance: Check out the claims made for the inoculant, relying on independent research if possible. The fact is that *most* inoculants "work" *most* of the time, either by decreasing fermentation losses, limiting aerobic spoilage, or by promoting higher milk production.

USDA dairy scientists, under the leadership of the highly respected Dr. Rich Muck, are beginning to understand why inoculated silages often result in higher milk production. In one trial with very high quality alfalfa silage, use of a silage inoculant resulted in a two-pound milk increase and 10% lower MUN. With inoculated silages there was less gas produced in the rumen but more growth of microorganisms. Rumen bugs are good, rumen gas is not.

High protein, sugar-limiting crops such as alfalfa and other forage legumes are more likely to benefit from inoculation than are high-sugar crops such as whole-plant corn. But this doesn't mean that you should inoculate one species but not the other, because research has shown highly economical responses to both. Most silage inoculants can be applied at very low water carrier rates — ounces per ton, not quarts — so you have to fill up inoculant tanks much less frequently.

— E.T.

WEATHER WOES

In much of the Northeast there was no 2-3 day "weather window" between mid-May and mid-June where farmers could make hay crop silage, let alone dry hay. So for the second consecutive year farmers are faced with late-cut, high fiber, low digestibility hay crops. Looking at the best-managed dairies in the Northeast almost all have a focus on corn silage, and for good reason: Alfalfa and grasses have a short period where quality and quantity are optimum, whereas corn is a much more forgiving crop. Farmers can start planting corn in late April (some say even earlier) and continue until early June with every expectation of harvesting a good crop. Corn hybrids have improved tremendously over the years, while improvements in alfalfa and cool season grasses have been modest at best. Hay crops have an ideal harvest window of a week, while corn has ideal planting window of several weeks. Corn harvested for silage matures at a rate of about 0.5% points of whole plant DM per day. So starting at 32% DM, 10 days later the crop is at 37% DM, which is still A-OK. Combine this with varied planting dates and hybrid maturities, and the actual harvest window for high quality corn silage on most farms is well over two weeks. The corn plant doesn't change nearly as much in quality as it matures from 32% to 37% DM, and if the crop is processed I'm not afraid of 40% DM — though that's not something farmers should aim for.

It's too late to make changes this year, but as you look ahead, consider the risks and rewards. Corn costs more to grow than a perennial crop such as grass — I'm not sure we should consider alfalfa a perennial, especially on the heels of this year's massive winterkill in the North Central states — but there's a much better chance that when October comes you'll have a good supply of high-quality forage. Dairy nutrition consultants can easily make high forage rations "work" with a forage component composed primarily of corn silage.

— E.T.

CAREERS IN AGRICULTURE

Two articles caught my eye recently: The first was a feature in Time magazine focusing on the recovery of the U.S. manufacturing industry. But today's manufacturing industry is becoming increasingly computerized, so even the floor workers need to have a technical education, in many cases a 4-year college degree. Wages for these people are excellent, reflecting their abilities.

The second article, this one in an e-newsletter, cited the growing need for agricultural college graduates. It's estimated that both now and in the near future there will be the need for over 50,000 graduates per year with B.S. degrees in agriculture. The majors in demand include animal science and agricultural economics, but the field needing the most new workers is plant and soil science. Finally, hay hauler Brad Nelson provides this useful tip on writing a résumé: "Never list on a résumé things you have done in the past that you never want to have to do again." Words to live by!

— E.T.

CHOOSING BETWEEN CRUDE PROTEIN AND METABOLIZABLE PROTEIN FOR YOUR COWS

You often hear people ask about the crude protein of your herd's diet, and in response some number ranging between 15 and 18% is given. However, have you ever stopped to think what crude protein is and why we put so much weight behind this number? The dairy industry has been using crude protein as a benchmark value for years with little concern that to the cow, crude protein means nothing. Instead, the cow cares about metabolizable protein, a number that few of us can rattle off as quickly as dietary crude protein but more importantly one that's of concern when formulating diets.

Crude protein vs. metabolizable protein

The difference between crude protein and metabolizable protein is critical to understanding why it's important that your cows are being fed adequate protein. Crude protein is a value derived from laboratory analysis in which the nitrogen content of a feed is determined and the resulting value multiplied by 6.25 to arrive at a crude protein value, as protein on average contains 16% nitrogen. The reason the dairy industry has been using crude protein for years as a benchmark for adequate protein is that it's a quick and relatively inexpensive analysis. On the other hand, metabolizable protein is the protein that is available to the cow. It's the combination of bacterial protein, feed protein, and endogenous protein that passes from the rumen into the small intestine.

Is there a relationship between crude protein and metabolizable protein?

There's no direct relationship between crude protein and metabolizable protein. Two diets containing the same crude protein content can differ in the amount of metabolizable protein they supply. This is partly due to the fact that as milk yield and milk protein yield increase so does the need for metabolizable protein. Another reason is that not all crude protein is the same, nor is the ruminal digestibility the same between protein sources. Crude protein for ruminants has three portions. First is the rumen-degradable protein, that available to the rumen microbes to use for protein synthesis.

The second is rumen undegradable protein, which passes through the rumen to the small intestine and is available for absorption across the intestinal lumen if the cow. The third is insoluble protein that will be excreted. Doepel and Lapierre (2006) illustrated the difference between two diets with exactly the same crude protein, but which differed in metabolizable protein due to the quality of the protein used. This shows that the diet with greater quality protein sources has a greater supply of metabolizable protein which could result in greater milk yield.

What to use when formulating rations for your lactating cows

Preferably metabolizable protein should be evaluated in your lactating dairy cow and the ration formulated to provide adequate metabolizable protein. Several trials have shown the on-farm benefits of providing sufficient metabolizable protein. Haque et al. (2012) increased metabolizable protein by approximately 500 g/day, which significantly increased milk yield by 9 lbs/day as well as increasing milk true protein percent by 0.15% (163 g/day). Another trial by Lee et al (2012) found increased total tract digestibility of several key nutrients including dry matter, organic matter, NDF, ADF, and crude protein. These studies illustrate the whole cow benefits that can be achieved through knowing the metabolizable protein content of the diet rather than just the crude protein content.

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** Selected References:*

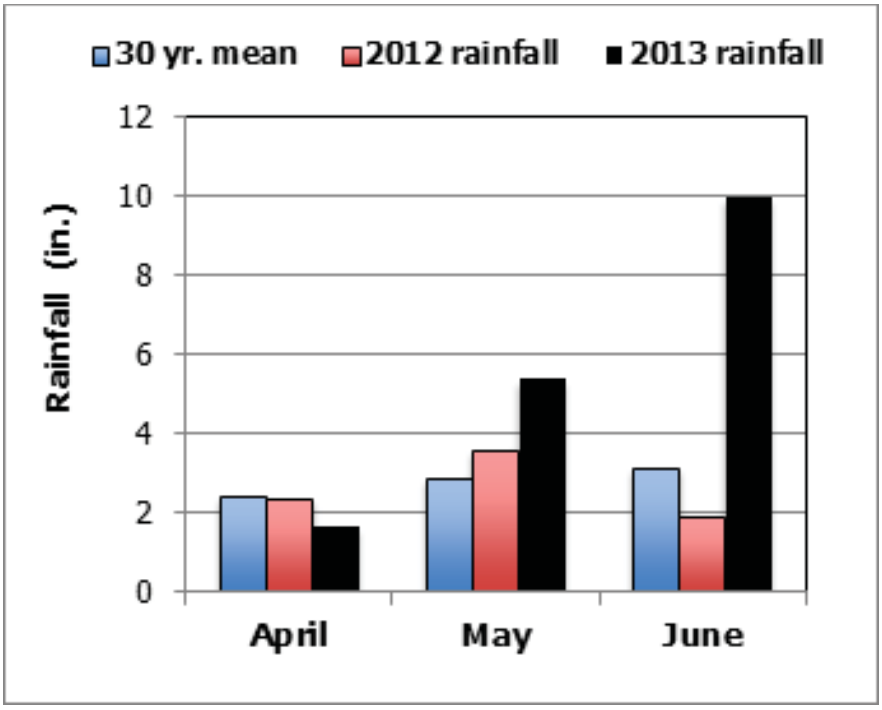
Doepel, L. and H. Lapierre. 2006. Challenges in protein nutrition for dairy cows. WCDS Adv. Dairy Tech. 18:57-67.

Haque, M. N., H. Rulquin, A. Andrade, P. Faverdin, J. L. Peyraud, and S. Lemosquet. 2012. Milk protein synthesis in response to the provision of an "ideal" amino acid profile at 2 levels of metabolizable protein supply in dairy cows. J Dairy Sci. 95:5876-5887.

Lee, C., A. N. Histrov, T. W. Cassidy, K. S. Heyler, H. Lapierre, G. A. Varga, M. J. de Veth, R. A. Patton, and C. Parys. 2012. Rumen-protected lysine, methionine, and histidine increase milk protein yield in dairy cows fed a metabolizable protein deficient diet. J. Dairy Sci. 95:6042-6056.

HOW WET IS IT?

The 2013-growing season in eastern northern NY started with a relatively dry April. The crops crew was ahead of 'normal' with 85 acres of new alfalfa-grass seeding done in April and 300 acres of corn planted May 17th (the official record for the earliest date the Institute had all of its corn planted, according to Ev Thomas).



Rainfall in May was nearly twice the 30-year average, while June has been wetter still. As of June 28, 9.98 inches of rain has fallen, over 3-times the 30-year mean monthly rainfall for June (3.15 in., Chazy Orchard weather station).

While there was a small window for harvesting some good quality first cutting, the wet weather has continued to create difficult field conditions. Abundant moisture has been good for seeding establishment and high first cutting hay crop yields, but has come at the expense of forage quality in some cases due to the delayed harvest and wet conditions (forage lignin tends to increase with wet and warm conditions).

Much of the corn crop is off to a very slow start with the excessive rainfall and relatively cool spring. Poorly drained areas in cornfields have been hit particularly hard. With sidedress nitrogen application and 2nd cutting on the horizon, wet conditions will continue to pose cropping challenges on many farms in the Northeast.

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2013 CORN SILAGE BLUES: IS BMR SORGHUM-SUDAN AN OPTION?

A few weeks can make a big difference in a season. May's rainfall was nearly twice the 30-year average and as of June 28, 9.98 inches of rain has fallen (Chazy Orchard weather station), over three-fold greater than the 30-year mean monthly rainfall for June (3.15 in.). The wet weather and cool early June has corn off to a sluggish start. Heavy rains have caused surface soil compaction in heavier soils. Low-lying areas have been repeatedly saturated and are largely devoid of corn plants.

The pale color and small stature of the corn is due to a lack of available nitrogen (N) and oxygen. Efficient plant respiration depends on well-oxygenated soils — oxygen cannot diffuse into soil pore spaces when it is occupied by water. Sustained flooding all but shuts down maize metabolism.

Excessive water has leached much of the nitrate-N from soils causing the corn to look a pale green color from a lack of N. Persistently wet areas also lose significant N to the atmosphere from a process called denitrification, which can result in large agronomic N losses (>50 lb/N/ac/yr).

Given our low corn silage inventory at present and the likely yield slump this season, the farm has been discussing the general need for more corn silage. While there are ways to ration existing corn silage (e.g., feed more hay crop silage), skimping on energy is not an option. Brown mid-rib (BMR) sorghum-sudan grass comes to mind when thinking about a high-energy forage crop at the end of June. While it can't match corn for yield, it can rival BMR corn in milk potential/ton (Cherney et al., 2004; see figures).

Is planting BMR sorghum-sudan grass a realistic option at this point? If you could seed down in a week or so, yields could be in the 1 to 2 ton DM/acre range. Though we anticipate taking a substantial yield loss for corn silage this year (we are estimating

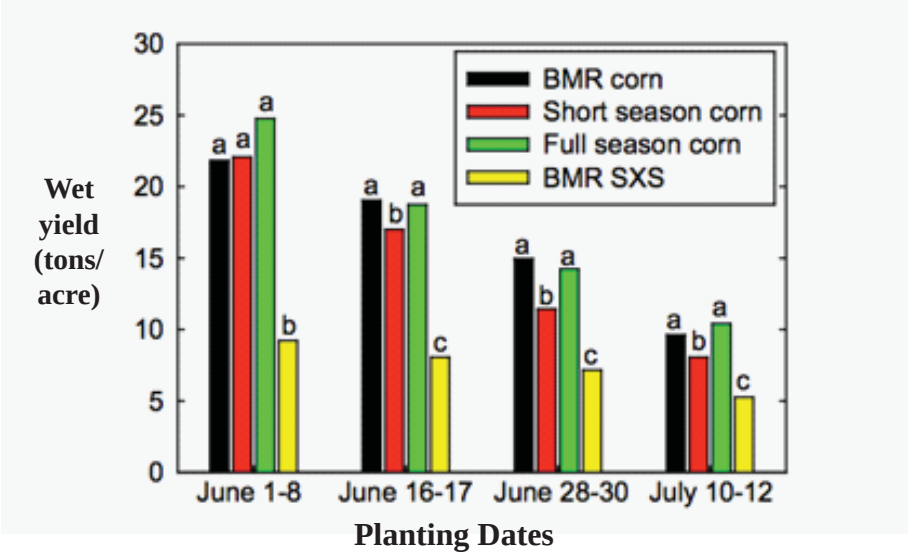
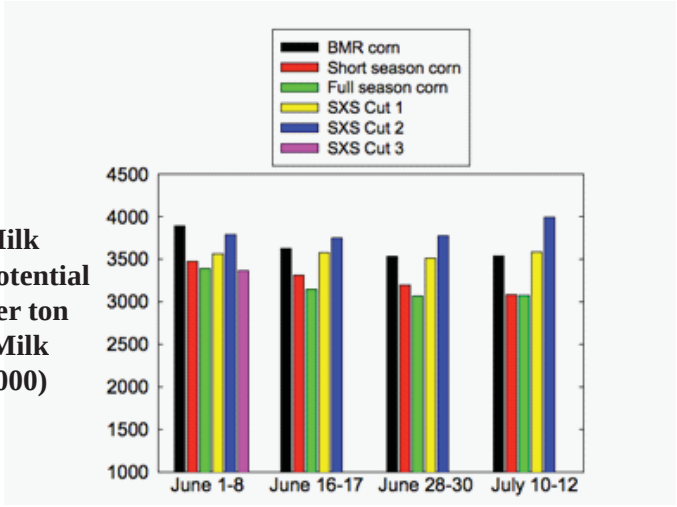


Figure 1. Silage yields averaged over locations. Similar letters above the column within each planting date means they are not significantly different. Yield declined linearly with delayed planting date. There are only two locations for the first planting date.



From Cherney et al., 2004

30%), much of the corn on well-drained soils is in decent condition all things considered. Our thought is that most corn planted by mid-May should be able to produce a decent ear with satisfactory starch and overall quality. With this idea in mind and the current dismal field conditions in our area, we have decided to focus on harvesting a timely 2nd cutting and hope to purchase some standing corn to help meet our corn silage inventory needs.

If you have significant corn for silage losses due to the extreme wetness and flooding, you may opt to plant BMR sorghum-sudan instead of corn in these fields. One of its advantages over corn is its ability to grow quickly in poor soil conditions- it grows more like a grass than corn does. It out competes weeds and can provide a highly digestible energy source if harvested at peak quality. Compared to corn, it is a lower risk to grow, cheaper, and easier to establish. Considering the extremely wet soil conditions in many areas and the uncertainty around the remainder of the growing season, planting a short season hybrid this late is risky. If you are feeding a high forage diet and expect major corn losses this year, you may want to consider BMR sorghum-sudan as an alternative high-energy forage source instead of replanting corn. As always, work closely with a nutritionist to determine how best to meet your forage inventory needs.

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SILAGE BAGGER IMPROVES CSPS, BUT WHAT ABOUT peNDF?

In a recent study we had the opportunity to determine the effect of a silage bagger on the Corn Silage Processing Score (CSPS) of two corn silage hybrids. We bagged BMR and non-BMR (conventional) corn hybrids for a silage feeding trial last fall (2012). We packed fresh chopped whole plant corn in two-gallon buckets at a density of 42 lbs/ft^3 as fed at the same time as filling the silage bags. Both silages fermented for over 150 days before being sampled for CSPS and peNDF. The effect of fermentation solublizing and softening the kernel fragments in the silage should have been similar between the buckets and silage bag samples. In other words we were not comparing green chopped corn kernels to fermented ones.

	BMR	Non-BMR
Non-bagged, %	56	55
Silage bagged, %	64	69

Table 1. Corn silage processing scores, % starch less than 4.75 mm, of bagged and non-bagged corn silage.

	BMR	BMR	Non-BMR	Non-BMR
	1.18 mm	3.35 mm	1.18 mm	3.35 mm
Non-bagged, %	93	70	94	67
Silage bagged, %	92	62	92	63

Table 2. Percentage of DM larger than 1.18 and 3.35mm upon dry sieving, (physical effectiveness factor; pef)

The CSPS is the percentage of starch in particles smaller than 4.75mm upon dry sieving. A score of >70% is optimal, 50-70% is average and <50% is inadequate kernel processing for good starch digestion. The CSPS results are shown in Table 1. The action of the silage bagger fingers packing corn silage into the bag definitely reduced kernel particle size, thereby improving the CSPS scores from "low" average to nearly optimal. We also looked at the effect of the bagging process on the pef of each silage, the proportion of DM larger than 1.18 mm upon dry sieving, used to calculate peNDF. (See Table 2.) Surprisingly, the silage bagger only slightly reduced pef of the silage for both hybrids, from 0.93 and 0.94 to 0.92 each. However, the proportion of DM larger than 3.35mm was reduced by the bagging process, from 0.70 to 0.62 for the BMR and 0.67 to 0.63 for the conventional corn silage.

The silage bagging process definitely reduced kernel particle size of fragments larger than 4.75 mm, resulting in increased and improved CSPS, and in theory improving starch digestion in the cow. Regarding the forage particles, technically the silage bagging process did not affect the pef value of the silages; it did not increase the proportion of fine forage particles smaller than 1.18mm. However, it did reduce the percentage of particles larger than 3.35mm, creating smaller particles. This could possibly result in decreased chewing behavior, which is really the true measure of peNDF.

Fermentations and silage pH were similar between the bagged and bucket (non-bagged) silages. Action of the silage bagger mashing silage into the bag definitely reduces particle size of both corn kernels and forage fiber.

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LEADING LADIES OF HEART'S DELIGHT FARM

In the June 2013 issue of Holstein World, the Leading Lifetime Production Powerhouses were listed for cows completing lifetime production records of over 200,000 pounds of milk for the first quarter of 2013. We were happy to note that two cows from our herd are in this list of leading ladies. Of the 112 cows listed, ours include Hearts-Delight Stan Angela, born in 2004 she finished with 235,020 pounds of milk, 7,988 pounds of fat and 7,217 pounds of protein. Also on this prestigious list is Hearts-Delight Cosmo Ace, born in 2003 and finished with 233,890 pounds of milk, 7,886 fat and 7,335 pounds of protein.

— Wanda Emerich

A BUYING OPPORTUNITY FOR FERTILIZER?

Due to several factors involving both supply and demand the retail prices of all major nutrients may bottom out this summer. Delayed spring planting in the Corn Belt caused some farmers to skip pre-plant P and K applications in a rush to get corn and soybeans into the ground. In some parts of the Corn Belt about half the corn crop was planted in a single week in mid-May: That doesn't happen without cutting a few corners. And international demand for most fertilizers has been weak, urea in particular. Meanwhile, increased phosphate production in the Middle East and Morocco and increased imports of potash have combined to boost supplies of these nutrients.

How can you take advantage of this? Fall fertilizer prices should still be relatively low, but probably not as low as they are right now. This would be a great time to topdress alfalfa fields that are low in P and/or K, where for one reason or another you haven't applied manure. (Even if you have to haul manure several miles it's still less costly than buying fertilizer.) High potash prices caused some farmers to skip a year or more of alfalfa fertilization. Alfalfa and alfalfa-grass are big users of potassium, and now may be a good time to do some catching up. If you know that you'll need to apply potash to corn fields after harvest, order it now for fall delivery or take it now either in bulk or in 1-ton bags. If you have high-and-dry storage and sufficient capital you might consider buying some starter fertilizer, MAP or potash and storing it for later use. One-ton bulk bags are made of woven polyethylene and tie securely at the top; experience at Miner Institute is that they can be used to store fertilizer for many months, especially low-N fertilizers though we've even kept nitrogen fertilizer in good condition through a winter. Buying and storing fertilizer for later use involves some price risk if prices remain low. But looking at all indications, chances are pretty slim of fertilizer being as cheap this coming winter or next spring as it is now.

— E.T.

FEED, Continued from Page 1

There have been several reports in the literature that illustrate the importance of ensuring that feed is readily available to the cow throughout the day. Many times I have mentioned the work done by Bach and co-workers that found a 4 to 8 lb/day advantage in milk production for herds that fed for some level of feed refusals and routinely pushed up feed. This research underscored the importance of ensuring feed availability to the cow. How many other management factors on the farm can result in that degree of milk yield response?

Research conducted in 2008 by Arizona dairy scientists evaluated the effect of feed push-ups every half-hour during the critical first two hours after feeding versus push-ups only each hour. There was not a significant effect on first-calf heifers, but multiparous cows produced ~4 lb/day more milk on about the same amount of feed for a 10% increase in feed efficiency. This is only one report and needs to be replicated, but it certainly points again to the importance of feed accessibility – in this case during those competitive hours following feed delivery.

Based on recently published research, my interpretation of these findings, plus what I have observed on farms as I visit them, here is a proposed "ideal" feeding management system that would lend itself to pushing the envelope for feeding for low refusals. What do you think?

- Target 2 to 3% refusals
- Total mixed ration fed 2x/day
- TMR composition that discourages sorting
- ½-hr push-ups for 2 hours post-feeding
- Consistent feed quality/quantity along the bunk
- NO overcrowding

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ETHANOL

Don't hold your breath waiting for E15 fuel, which is a blend of 85% gasoline and 15% ethanol. There are only about a dozen gas stations in the U.S. selling E15 — one of which we stopped at (in Indiana, I think) while our driver filled up his pickup truck with the stuff. Given current ethanol economics it's unlikely you'll see many (any?) more stations selling E15. In order to be economical E15 must be priced 30% less than E10 fuel: If E10 is $4/gallon then E15 must be $2.80 or less, but at those dozen gas stations (most or all in the Midwest) E15 is almost exactly the same price as E10 and in fact last fall was a few cents ***higher***. There's simply more ethanol being produced in the U.S. than the current market will bear, which is why when I was in Texas last year I saw a huge ethanol plant that had been mothballed. With the problems being experienced in marketing grain-based ethanol, what do you think the chances are of a company investing millions in the development of cellulosic ethanol? Even if it could be produced economically — and so far it cannot — there's simply no market for it.

— E.T.

METRICATION IN NORTH AMERICA

I was giving a talk in Ontario so converted measurements from the so-called "English" system to metric: Acres to hectares, gallons to liters, pounds to kilograms, and tons to tonnes. Part way through my talk a farmer interrupted me, saying "Don't use hectares, use acres!" This was in spite of the metric system being "the law of the land" in Canada since the 1970s. Based on this and other experiences in Maple Leaf country I've concluded that regarding measurements, Canadians are confused and conflicted. Years ago I was listening to an Ontario livestock market report where live hogs were priced in dollars per hundred pounds while pork carcasses were priced in cents per kilogram. Only in Ontario must a hog die before it can join the metric system! Quebec, on the other hand, has fully embraced the metric system and most farmers there have long since abandoned the English system. (In fact, abandoning anything English holds considerable appeal to certain Quebecers.) However, predating the adoption of the metric system, land area in Quebec was measured in arpents, an ancient French measurement used for both distance and area. One square arpent is — or was — 0.84 acres. However, there were various lengths of a standard arpent: A "new" Quebec arpent is 192 feet long while the "old" arpent was 180 feet long. In Paris an arpent was 220 French feet, and French feet were longer than English feet. Is this all clear now?

Of course the U.S. has nothing to brag about in this regard since we've successfully resisted most efforts to get us to use the metric system. Most of us know that a liter is 16.9 ounces because that's the container size of some soft drinks. But milk is still sold in quarts and gallons and beer in ounces, and asking the average citizen how many acres are in a hectare is likely to be met with a blank stare. Even university scientists whose research is funded by public dollars have resisted the "move to metric." It's amusing to read a research report in a scientific publication such as the Agronomy Journal and note a fertilizer application rate of 224 kg/Ha. Why that number? Simply because 224 kg/Ha converts to 200 lbs per acre, which is the rate the researcher used.

The metric system is simple because mostly it consists of moving decimals back and forth. But it's easy to see why an Ontario farmer may prefer the comfort of the English system, especially if he's trying to sell his farm: While his farm had 300 acres, after metrication it now has only 120 hectares so is less than half as big; summer temperatures were in the 80s but now they seldom reach 30; and with the change from miles to kilometers his farm is now almost twice as far from town.

— E.T.

NOTABLE QUOTES

You may know Alan Alexander Milne as A.A. Milne, British author of the several "Winnie the Pooh" children's books that were written in the 1920s but entertain children (and their parents) to this day. Many folks know that Milne was the creator of Winnie-the-Pooh, Tigger and Eeyore but fewer know that the boy in his stories, Christopher Robin, was named after his son Christopher Robin Milne. A.A. Milne was author of many novels and screenplays, and had a quick wit. A few of Ev's favorites:

• One of the advantages of being disorderly is that one is constantly making exciting discoveries.

• Bores can be divided into two classes: Those who have their own particular subject, and those who do not need a subject.

• Organizing is what you do before you do something, so that when you do it, it is not all mixed up.

• Sometimes I sits and thinks, and sometimes I just sits.

• People say nothing is impossible, but I do nothing every day.

• Yesterday is history, tomorrow is a mystery, but today is a gift. That's why we call it the present.

WHAT'S HAPPENING ON THE FARM: RAINED OUT

Miner Institute farm staff have been busy trying to keep themselves and the cows dry! We have seen very few (if any!) days in June without at least some rain, and numerous days with heavy rain. In their efforts to deal with the deluge of rain, What's Happening on the Farm got washed away! They promise to have an update in August.

MINER INSTITUTE OPEN HOUSE: SATURDAY, AUG. 10
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Closing Comment

Common sense isn't a gift,
it's a punishment because you have to deal with everyone who doesn't have it.

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