



# FARM REPORT



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## FROM THE PRESIDENT'S DESK — COW COMFORT ECONOMICS 101

This past year, I have given numerous talks on the importance of managing for cow comfort. We know that the on-farm management environment explains over half of the variation among farms in milk production. Increasingly, producers are realizing that modest investments in housing, or changes in their cow management routines, can pay large dividends in greater cow health and performance. As we look to the future and the continuing volatility in feed and milk prices, we need to sharpen our focus on the consistent economic benefits of improved cow comfort – information we can literally “take to the bank(er)!”

A combination of controlled research and field case studies are providing a substantial and growing body of information on the expected cow responses to specific changes in the management environment. Here are some of the most economically important relationships:

- Stalls per cow (1.7 lb/cow/day per 0.1 increase in stall availability), feeding for refusals (+3.5 lb/cow/day), and feed push-ups (+8.7 lb/cow/day) are all positively related to herd milk production.
- Minimizing time outside the pen is the key to optimal time budgeting. Meeting time budget requirement for resting results in greater milk yield (5 to 8 lb/day more) and lower incidence of lameness.

- Expect 2 to 3.5 lb/cow/day more milk whenever cow comfort is improved that results in one more hour of resting time.
- When cows are chronically deprived of adequate resting opportunity, they will also sacrifice eating time and the potential for feed consumption in a 3.5:1 ratio.
- Heat stress abatement needs to begin at THI = 68, occur during the dry and the lactating phase, and will result in greater feed intake and milk yield (average of 10+ lb/cow/day), less lameness, and a healthier transition period.
- Co-mingling first-calf heifers with older cows leads to loss of resting activity, rumination, and milk yield. Plan on a ~10% loss in milk for the heifers. When stocking rate is increased, the negative effect is even more pronounced even at low levels of overcrowding (such as 110 to 115% of stalls and headlocks).
- Improving the comfort of a stall, according to numerous case studies, should improve milk yield (3 to 14 lb/cow/day), lower turnover rates (-6 to -13%), lower somatic cell count (-37,000 to -102,000), and reduce lameness (-15 to -20%).
- Optimizing the feeding environment will promote aggressive feeding behavior



# LOWER-STARCH DIETS FOR FRESH COWS

Controlled-energy dry diets are recommended for use in the far-off dry period in a two-group management system or in a one-group management system. The controlled-energy dry diet approach has been successful in some but not all dairies. Some of the failures may be attributed to a transition to an inappropriate fresh cow diet. Unfortunately, there is limited research data with fresh diets, especially following a controlled-energy diet fed for a 60 or 40-day dry period.

Recently at Miner Institute, we used 72 multiparous Holstein cows to evaluate the effect of dietary starch content in corn silage-based diets fed in early lactation on performance and blood metabolites following a shortened (40 day) dry period where a controlled-energy diet was fed. Typically, controlled-energy dry diets contain between 12 to 16% starch on a dry matter basis, which is much less than lactation diets (e.g.  $\geq 23\%$  starch). A phase feeding or step-up approach to feeding during the prepartum and postpartum periods is often recommended but the optimal increase in starch from a controlled-energy dry diet to a lactation diet is unknown.

Dietary treatments (Table 1) were 1) a low-starch diet (21.0%) for the first 91 days in milk (DIM; LL), 2) a medium-starch diet (23.2%) for first 21 DIM and a high-starch diet (25.5%) for the next 70 DIM (MH), and 3) a high-starch diet (25.5%) for the first 91 DIM (HH). Corn meal was replaced partially with soyhulls and wheat middlings in the low and medium diets. The use of the terms low, medium, and high starch are relative for this study and do not necessarily reflect the range of starch fed throughout the U.S.

Table 1. Ingredient and analyzed chemical composition of low, medium, and high starch diets fed to early lactation Holstein cows.

Item	Low	Medium	High
Ingredients, % of DM			
Corn silage	34.6	34.6	34.6
Haylage	11.4	11.7	11.4
Wheat straw	4.1	4.1	4.1
Corn meal	6.9	11.1	16.7
Soybean meal	11.4	11.9	11.9
Soybean hulls	9.7	6.5	3.2
Wheat middlings	6.1	3.9	1.8
Canola meal	3.1	6.1	6.1
AminoPlus	2.5	-	-
Other	10.2	10.1	10.2
Chemical composition			
DM, %	49.5	50.1	49.6
CP, %	17.3	17.0	16.7
NDF, %	35.7	33.9	31.9
Sugar, %	6.1	5.8	5.9
Starch, %	21.0	23.2	25.5
Rumen fermentable starch, %	16.8	18.9	20.2
Digestibility			
24-h NDF, % NDF	58.4	57.3	54.0
7-h starch, % starch	76.5	76.7	74.5

Table 2. Lactational performance for the first 91 DIM.

Item	Dietary Treatment			SE	P - value
	LL	MH	HH		
DMI, kg/d	25.2 <sup>x</sup>	24.9 <sup>xy</sup>	23.7 <sup>y</sup>	0.5	0.06
Starch intake, kg/d	5.3 <sup>b</sup>	6.3 <sup>a</sup>	6.1 <sup>a</sup>	0.1	<0.001
Rumen fermentable starch, kg/d	4.4 <sup>b</sup>	5.2 <sup>a</sup>	5.0 <sup>a</sup>	0.1	<0.001
Neutral detergent fiber intake, kg/d	9.0 <sup>a</sup>	8.1 <sup>b</sup>	7.6 <sup>b</sup>	0.2	<0.001
Sugar intake, kg/d	1.5 <sup>a</sup>	1.5 <sup>ab</sup>	1.4 <sup>b</sup>	<0.1	0.02
Milk, kg/d	47.9 <sup>ab</sup>	49.9 <sup>a</sup>	44.2 <sup>b</sup>	1.6	0.04
3.5% Fat-corrected milk, kg/d	51.9	52.2	47.4	1.7	0.09
Solids-corrected milk, kg/d	47.4	47.9	43.5	1.5	0.09
Fat, %	3.88 <sup>x</sup>	3.64 <sup>y</sup>	3.79 <sup>xy</sup>	0.08	0.08
True protein, %	2.90	2.92	2.97	0.04	0.52
Milk urea nitrogen, mg/dL	15.2 <sup>a</sup>	12.7 <sup>b</sup>	11.9 <sup>b</sup>	0.3	<0.001
Milk/DMI, kg/kg	1.92	2.02	1.87	0.06	0.18
Milk nitrogen efficiency, %	34.2 <sup>b</sup>	37.6 <sup>a</sup>	35.6 <sup>ab</sup>	0.7	0.005
Body weight, kg	681	682	682	12	0.99
Body condition score	3.13	3.04	3.16	0.07	0.46
Serum NEFA, $\mu$ Eq/L (1-21 DIM)	452 <sup>aby</sup>	577 <sup>ax</sup>	431 <sup>by</sup>	43	0.03
Serum BHBA, mg/dL (1-21 DIM)	9.3	8.8	7.8	1.1	0.15

<sup>ab</sup> Least squares means within a row without a common superscript differ ( $P \leq 0.05$ ).

<sup>xy</sup> Least squares means within a row without a common superscript differ ( $P \leq 0.10$ ).

Lactational performance is summarized in Table 2. During the first 91 DIM, dry matter intake tended to be higher for cows fed LL than cows fed HH; cows fed MH were intermediate. During the first 21 DIM, cows fed M consumed similar

starch and rumen fermentable starch as cows fed L. However, when the MH cows were fed the higher starch diet after 21 DIM, they consumed more starch and rumen fermentable starch than LL cows. The cows fed  
See **FRESH COWS**, Page 3

# CONTROLLED-ENERGY DIETS FOR DRY COWS

If your fresh and high producing cows always have a sharp loss of body condition after calving, a greater occurrence of metabolic disorders such as ketosis, and delayed resumption of heat, then it is time to check your nutritional management.

At the top of your nutrition checklist should be: Are you overfeeding energy to your dry cows or are still using a “steam-up” diet?

A series of studies in Dr. James Drackley’s lab at the University of Illinois reported that cows may easily consume up to 80% more net energy for lactation (NE<sub>L</sub>) than required during the dry period even when only moderate-energy (0.68 – 0.73 Mcal NE<sub>L</sub>/lb DM) diets were fed. They found that overfeeding energy during the dry period resulted in a drastic drop in feed intake and more negative metabolic response during the transition period. The overfed cows had higher plasma concentration of non-esterified fatty acid (NEFA, indication of greater mobilization of body fat) and beta-hydroxybutyrate (BHBA, indicator of ketosis), much higher liver fat storage (fatty liver disease), and greater incidence of metabolic disorders shortly after calving. In contrast, cows fed a “controlled-energy” diet (CED) during the entire dry period had more stable feed intake during the transition period, less reduction of body condition score, smoother metabolic adaptation, and similar milk production in early lactation. With the inclusion of 30 to 35% (DM basis) wheat straw and less concentrate, this CED was not simply formulated with less energy content but also effectively controlled energy intake to meet the requirement of dry cows even with free access of TMR by the rumen-filling effect of its bulky nature.

To provide a simple and practical approach for use on commercial dairy farms, Dr. Drackley offered several tips for formulation of CED:

- A high-straw CED works the best for producers relying on corn silage as the main forage due to the complementary characteristic of straw and corn silage.

- Wheat straw should be chopped to < 2-inch length particles, which is a key to prevent sorting.

- The energy density of the diet should be 0.59 – 0.63 Mcal NEL/lb DM. An easier way to control this is targeting forage NDF at 40 to 50% of DM or 10 to 12 lb of daily intake.

- Crude protein content: 12 to 14% of DM with > 1000 g/d of metabolizable protein.

- Starch content: 12 to 16% of DM.

- The diet DM content: < 55%. Dry matter of the diet should be carefully monitored and water added when necessary.

- For close-up dry cows, anionic salt products should be included following the manufacturer’s guideline.

In addition, detailed attention should be paid to feed-bunk management:

- Check the difference in particle size and NDF content of TMR and refusals as frequently as you can to make sure cows are not sorting.

- A crowded pen will decrease the eating time of cows. This means that your cows could be feed-restricted if a high-straw CED is given to an overstocked dry cow pen. Ensure that all cows can easily access the feed and spend sufficient time eating.

The correct formulation of the diet and careful feed-bunk management are two keys to ensure the success of a high-straw low-energy diet for dry cows.

— Peng Ji, [ji@whminer.com](mailto:ji@whminer.com)

# FRESH COWS, Continued from Page 2

MH had higher milk yield than cows fed HH, indicating the benefit of a step-up feeding approach for starch when a controlled-energy dry diet is used. Cows fed LL had higher milk urea nitrogen than cows fed MH and HH, indicating less efficient use of nitrogen presumably due to less rumen fermentable starch intake and (or) excess dietary crude protein intake. Milk nitrogen efficiency was highest for cows fed MH because of high milk true protein yield and intermediate crude protein intake relative to the other treatments. Lipid mobilization to support negative energy balance was not compromised based on acceptable losses of body weight and body condition, and concentrations of serum nonesterified fatty acids (NEFA) and beta-hydroxybutyrate (BHBA). Serum NEFA tended to be higher for cows fed MH than cows fed LL or HH.

This study demonstrated that lower starch ( $\leq 23\%$ ) diets can support lactational performance following a controlled-energy dry diet. The step-up diet approach (MH) may be preferred over the one-group diet approach (LL and HH) because of improvements in nutrient use (i.e. milk nitrogen efficiency). However, the 1-group lactation diet approach (LL) may be preferred when energy from corn starch is expensive relative to energy from nonforage fiber sources or when a facility does not have the ability to have two groups in early lactation.

— Heather Dann  
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# WHAT'S HAPPENING ON THE FARM

The holiday season has arrived at the farm and we have had our first snowfall of the year. Last-minute winter preparations are underway and everyone is staying busy around the barn. During the month of November we had forty new calves, 57% of which were heifers. Over the past year, about 48% of our calves have been heifers, so our calf feeders have had a particularly busy month and our replacement numbers have grown.

The crop crew has also been hard at work. A mild fall has allowed

us to continuously haul manure to the fields. The manure application, along with some new tile, and a few more acres of cleared land will give us a good start to the coming crop season. We are looking forward to a better year for growing and harvesting forage crops.

Though we had an unpredictable crop season this year due to the weather, our cows have done well. Our transition cow management has paid off and we have had few metabolic problems in our fresh cows. Over the past year, frequency

of retained placentas was about 10%, a little higher than we would like, but the incidence of displaced abomasums has stayed below 3% and less than 1% of our fresh cows have had milk fever. Good herd health, along with milk prices that have averaged four dollars more than last year have allowed for a good year in the barn. We now begin the challenge of maintaining production and health as we feed out this year's crop.

— *Laura Turek*  
*turek@whminer.com*

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## SEED ORDERING CONSIDERATIONS

A few things to think about as you place 2012 field crop seed orders:

1. Alfalfa seed supplies will be tight and prices higher, in part because some U.S. alfalfa seed acreage got plowed up and planted to grain crops. Poor growing weather also took its toll, including in Australia, which markets alfalfa seed worldwide. While there may be shortages of non-dormant varieties (used primarily in California and the Southwest), there should be enough alfalfa seed of dormant varieties (which is what we use in the Northeast) to go around. This will be helped by carryover inventories, but as usual supplies of some of the newer and most popular varieties will probably sell out. There's no risk in ordering alfalfa seed early since most seed companies are great about order changes, but there's a risk in doing nothing until just before planting.

2. One seed company is selling a BMR + non-BMR corn hybrid blend, but I'm no fan of mixing BMR and dual-purpose corn hybrids in the planter or

in the field. BMR corn is just "different stuff," both in the field and in the cow. It may respond differently to unusual weather conditions, particularly drought. And BMR corn silage is so much higher in digestibility that it should be stored in a separate structure.

3. There continues to be differences of opinion concerning BMR's susceptibility to lodging. Cornell doesn't take lodging data on its corn silage hybrid trials—no university does(!)—so we have no data, just opinions and you know what they say about those. However, Bill Cox at Cornell says that none of the hybrids in its silage trials — BMR and otherwise — lodge so why measure something that reveals nothing? One year we had a field of BMR at Miner Institute that started to lodge (at 35% DM) due to stalk rot, but a BMR field just up the road—same hybrid, same planting date—was unaffected. We chopped the problem field right away and wound up with very few plants on the ground. We occasionally hear horror stories about a field of BMR lodging badly, but they

appear to be the exception. To minimize lodging problems with BMR hybrids, keep plant populations reasonable (but not lower than normal), plant in fields with good fertility and moisture-holding capacity, and harvest before whole plant DM exceeds 35%. And remember, BMR is silage-only!

4. A final comment on standability: I like to use the term "functional standability," meaning that a plant isn't lodged unless after the field is chopped it winds up lying in the field for the geese and other critters. Plant breeders have done a great job of improving standability so it isn't nearly the problem it was a generation or more ago, and row-independent (Kemper-style) heads do a better job of picking up semi-lodged plants. I've seen some fields with corn borer damage that looked pretty shabby, but when the chopper got done there were very few plants on the ground — and isn't that the objective?

— *Ev Thomas, thomas@whminer.com*

# FORAGE LAB YEAR IN REVIEW

Phew, it has been a long year, and, in some sense, a short year. Months clicked off like weeks. Seems like just yesterday that we were soaking, rinsing, rinsing, rinsing and sieving forage particles to mark with rare-earth elements for our big particle passage trial, informally known as TIJ -- “The Italian Job.” We started in early January with a practice run of TIJ with our Advanced Dairy Management students. Rumen evacuations, cow watches, late nights, round-the-clock sampling of milk, blood, rumen fluid, manure, manure and more manure became routine for the entire year. Spring and early summer were filled with an array of tie-stall and summer student projects covering a variety of topics: blood lysine levels, rumination indices, fecal NDF and fecal cortisol levels. Let me not forget the silage trial involving a marathon of packing silage buckets on the hottest most humid day of the year. Suddenly it was late summer and fall with a pen study feeding trial and tie-stall carbohydrate source trial. Cow work finally finished about three hours before Thanksgiving break only to be followed by six weeks worth of lab



analyses to be completed in the four weeks remaining before Christmas. All of this, in an effort to prepare the final reports that Rick Grant and I will take to Japan on January 3 for our annual meeting with Zennoh.

In all, we have conducted over 13 research trials this year.

From our Forage Lab, I would like to thank everyone on our research staff for their tremendous efforts to “get the job done” and to get it done well. Without you we would not have the quality of research to present to the local, regional, national and international audience that we serve.

A huge thanks also goes out to the Farm and Crops Crew who accommodate our intrusions on their efforts to maintain one of the top-producing herds in the nation. And also thanks to our Maintenance crew that can build and fix just about anything, including our new research drying and sample processing facility over by the Tie-Stalls. No more lugging feed, forage and manure samples across campus to the Miner Center 2nd floor labs. We are still debating what to call this facility. Some of the proposed names include: The Shake and Bake, The Clubhouse, The Nook, The Room of Requirement (we have needed this space for a long time), and my personal favorite, The BIO Lab (By Invitation Only).

Hey, thanks again to all my forage lab coworkers and the entire Miner Crew for helping us successfully get through the year.

Thank you and ...  
Happy Holidays!

— Kurt Cotanch  
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## CORN GRAIN PRICES

While I don't think that we'll see a return to \$3 or lower #2 corn, neither do I think that \$6 and higher corn will be the “new normal,” a term much in vogue these days. There are several reasons for this, but one that most of us have missed: Corn yields have been on a plateau for the past nine years, in contradiction to a 70-year trend of average U.S. corn yields increasing by 2.2% per year. So while the long-term trend would suggest that U.S. corn yields should be 20% higher than a decade ago, they are not.

What's the reason for this plateau? Have we reached our peak in corn

yield? Certainly not; the recent flat-lining of yield increases is more likely due to adverse weather conditions and new land coming into corn production. While the acreage of corn grain in Northern NY is small potatoes compared to the national crop, a whole lot of farmers in the region planted extra corn (to be harvested as grain) in 2011. I doubt that this corn averaged over 150 bu/acre... What's more likely to happen is that with “normal” weather conditions, corn yields will resume their 2% or so annual yield increase. This may or may not happen in 2012 since nobody can reliably predict the growing

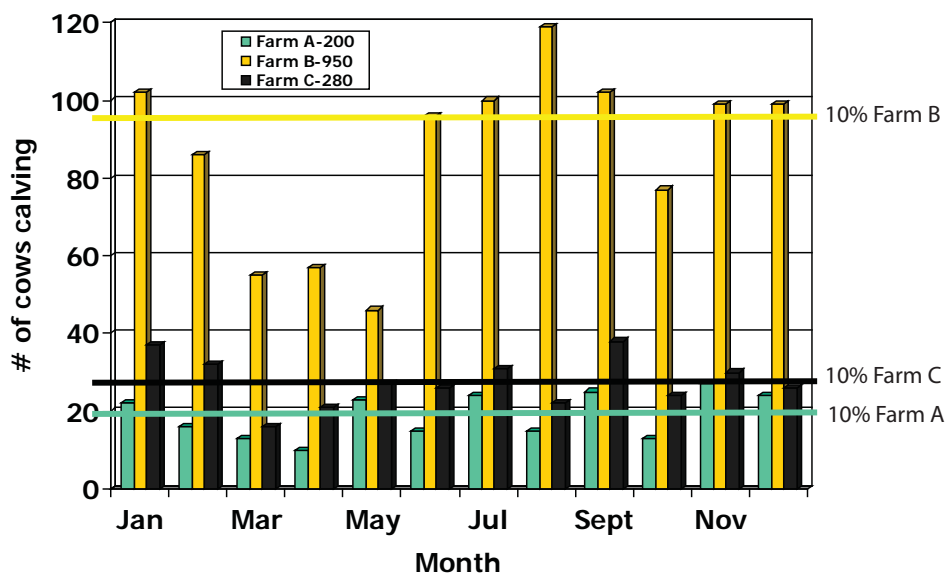
season weather, but over the next few years we're likely to see corn yields increase. If farmers plant 85 million acres of corn in 2012 (quite possible) and average yields are 152 bu/acre (the 9-year average since yields hit the plateau), that's 14 billion bushels and would fully meet 2011-12 projected consumption. If planted acreage and/or yields are higher than this, corn prices would decline from current levels. How far would they drop? Current long-term futures prices are under \$6, and with a big crop \$5 is certainly possible.

— E.T.

# MEASURING REPRODUCTIVE EFFICIENCY – SIMPLIFYING THE APPROACH

Each year I work with our Advanced Dairy Management students to review approaches to evaluate reproductive performance in herds when conducting dairy farm evaluations for their coursework at Miner or in preparation for the National Dairy Challenge that takes place in March. The benchmarks proposed by Dr. Ray Nebel, previously a professor at Virginia Tech and now serving as a Senior Reproductive Specialist for Select Sires, Inc., have been commonly cited and are used by most to evaluate reproductive performance on farms.

Over the last 10+ years, the benchmarks have changed slightly...becoming a little more forgiving particularly in the areas of calving interval and days open. While there is value in many of these benchmarks, I find it challenging to teach students the lingo without confusing the fundamentals of what we are trying to accomplish. Abortion rates and reproductive culls are pretty straightforward. Days to first service isn't as valuable an assessment tool with the increased use of timed AI which usually results in all animals being serviced at the same days in milk. The discussion gets a little murkier when we get to conception rate and pregnancy rate...biologically they are similar but when it comes to



measuring repro efficiency we define pregnancy rate as heat detection rate (HDR) x conception rate. This leads me to a pet peeve of mine: how we define HDR – the number of animals bred over a 21-day period divided by the number of animals eligible for breeding over the same period. With the increased use of timed AI, HDR is no longer a measure of our ability to detect heats. In many ways it over-inflates the value, which subsequently over-inflates our assessment of pregnancy rate. As a result of timed AI, HDR is now substituted with the term Insemination Rate or Risk in the calculation of pregnancy rate. At

Bottom line for him was checking 20 animals pregnant each month in our milking herd of ~200 cows. If he accomplished this goal, he would have consistent cash flow and sufficient herd replacements assuming a cull rate of ~30%. This goal has allowed him some flexibility most years to augment farm income by increasing voluntary culls or selling dairy heifers. I took his simplified approach to the classroom, expanded it slightly and incorporated it into the following evaluation of reproductive performance for our farm evaluations:

this point in my lecture to students, I'm getting a glassy stare and I must say I don't blame them! There has to be an easier way.

Quite a few years ago, my husband and I got into a discussion about the value of these reproductive measures to him as a dairy producer. He bluntly told me that he didn't care what any of his herd values were (with the exception of abortion rates).

Parameter	Goal	Intervention
Days Open	115	160
Calving Interval	13	14.5
Days to First Service	75	100
CR, 1st Service, %	55	30
CR, all services, %	50	30
HDR, %	70	40
Repro culls per lactation, %	<8	15
Abortions, %	<5	10

Table 1. Eight benchmarks with intervention levels for monitoring the reproductive status and trends in a dairy herd. (adapted from Ray Nebel)

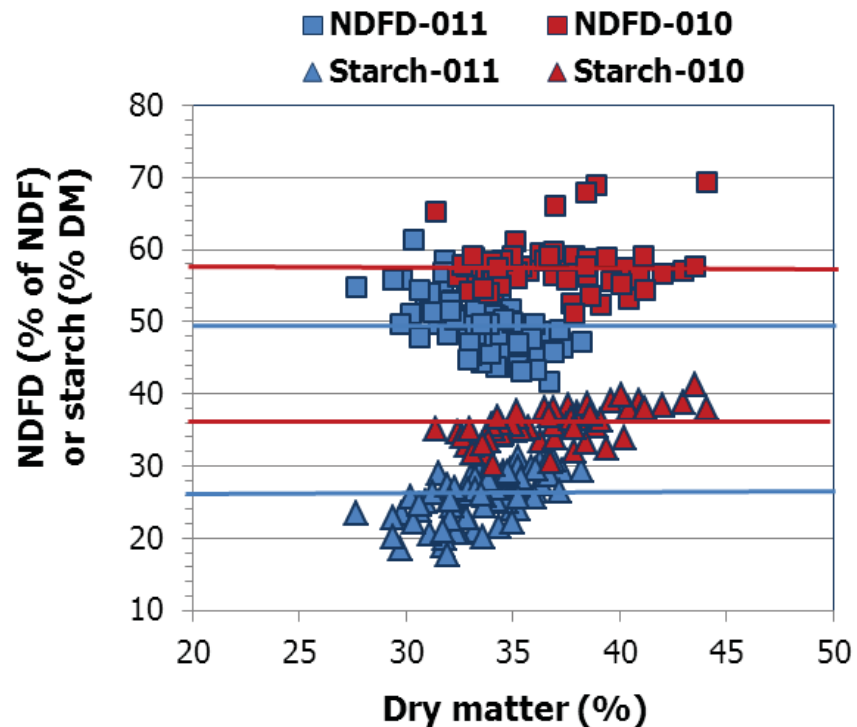
- How many cows are checked open during veterinary clinics for pregnancy?  
If >25% checked open, then heats have been missed or cows aren't showing heats – a good indicator of true ability to detect heats on farm.
- How many heifers are checked open during clinics?  
If >15% checked open, then heats have been missed...these animals should be the most fertile on a farm.
- 10% of number of cows milking should be checked pregnant each  
See **REPRO**, Page 10

# 2011 CORN SILAGE HARVEST: WHAT A DIFFERENCE A YEAR CAN MAKE

The 2011 cropping season will not be soon forgotten in Northern NY and New England. September, October, and November turned out to be warmer than normal (+5.9, +3.6, and +5.7 °F above 30-year average, respectively) with near average to below average rainfall (-1.43, +0.44, and -1.02 inches), which helped keep field conditions manageable for the most part. The warm and relatively drier fall weather was badly needed after Irene and tropical storm Lee hit.

As expected, corn silage yields and quality are far below last year's banner year. Although there was some variation across the state, most of NY's corn crop was negatively affected by this season's moisture extremes. Bill Cox reported that yields were approximately 35% lower than average across their variety trial locations.

At the Institute, our silage yield across the farm was about 37% below last year's average. Quality also took a hit across NY. At Cornell's Aurora Research Farm, the average starch level across all hybrids was about ten points lower than 2010 (see figure). This can be largely attributed to the hot, dry conditions during silking and subsequent reduction in ear size, number of kernels, and starch content. Starch levels at the Institute were also slightly lower than 2010, but some



NDFD and starch content as a function of dry matter content for hybrids grown at the Aurora Research Farm in 2010 and 2011. Data are from Cox et al., 2010 and 2011.

of our fields were harvested on the drier side which helped offset the lack of starch caused by this year's stressful growing environment. The weather this year also reduced NDF digestibility (NDFD).

At Auora, hybrids showed nearly an eight point reduction in NDFD compared to 2010 (this decrease in NDFD is like going from a BMR hybrid to a non-BMR). The warm and wet conditions during vegetative growth likely contributed to the reduction in digestibility. The combination of lower yields, energy and digestibility will prove challenging. Though we have not started feeding our 2011 corn yet, many farms are likely feeding this

year's crop. A lack of inventory will keep the 2011 silage price high so make the most of your crop.

Assuming climate scientists are correct, the Northeast could be in for more weather years like 2011. While this year offered plenty of crop challenges, it should remind us of the importance of management practices such as adequate drainage, proper tillage, good crop rotations, and maintaining soil quality. A year like this is humbling but should cause us to reconsider our approach to assessing and managing crop production risks in the future.

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# THOUGHTS ON PROPOSED REGULATIONS FOR CHILDREN'S FARM WORK

I asked a dear friend of mine, Cheryl Morse, her thoughts regarding the proposed legislation to limit the work activities allowed of farm children. Cheryl is a professor in the Geography Department at UVM who specializes in both children's geography and rural studies. After a long and thorough discussion, I had her write a brief article for the Farm Report. Here are some of the high points she discussed.

In a recent news article on the proposed US Department of Labor regulation changes for children's farm work, Barbara Lee, the Director of the National Farm Medicine Research Center is paraphrased as saying, 'Children are not "little adults" (Milwaukee Journal Sentinel, 11/29/2011). To this I would add, nor are 14 year olds 'tall toddlers.'

I see embedded within the proposed labor regulations a set of very important questions, questions that demonstrate how societal perceptions about children and about rural livelihoods are constantly shifting. These include:

Who is a child? Where do kids belong? Whose responsibility is it to ensure their safety? How do we raise young people to be competent, skilled, and responsible adults, equipped experientially and emotionally to face the dangers of the world? What constitutes the "family" in family farming?

How will the proposed regulations impact rural communities, readiness to work, and youth outmigration?

As a society, we are still unsure about when babies become children, when children become teens, when teens are young adults. This ambivalence is expressed in our rules: At age 14 children can hunt, at age 16 children can drive, drop out of school, work and get married; at 18 they can vote, join the military, and leave home without parental consent; at 21 they can drink alcohol; they can stay on parent's health insurance until they are 26. The point is that who we consider to be a child and what is considered appropriate levels of work, supervision, and schooling has shifted dramatically over the years.

Farm work has also changed over the years. Changes in technology have brought us huge combines as well as roll bars and safety belts. To be sure, young children ought not be operating large equipment in isolation or working with dangerous livestock; they also should not bike in the middle of the street; or swim without an adult. That is common sense. The family farm is envisioned by many as an ideal place to raise children because young people can learn alongside adults, gain important hands-on skills, and appreciate that doing chores is a meaningful and necessary contribution

to the family. Farm families know how dangerous the farm can be. The answer to increasing youth safety on the farm is not necessarily to delay the age at which a young person can engage in farm tasks, but to provide the mentoring necessary to ensure the young person internalizes prudent decision-making behavior. We entrust adults with the responsibility to teach 15 year olds to drive on the interstate and 14 year olds to carry a loaded weapon in backyards. We should do the same with farming. If there is on-going concern that farmers and parents don't have the resources or information to provide young people with safe farming environments, information and resources should be made available through all of the channels available: US Dept of Labor, Extension Service, FFA, 4-H, the Grange, farm equipment manufacturers and dealers. In most cases, have we not learned that an education /advertisement campaign does far more to change minds and practices than regulations? Wouldn't a "Kid-Safe Farming" initiative engage the ag community in a conversation about young people on the farm while also promoting the importance of farming's tradition of learning by doing? Let's consider treating young people as the competent people we wish them to become.

— Kurt Cotanch, [cotanch@whminer.com](mailto:cotanch@whminer.com)  
— Cheryl Morse  
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## SAVE THE DATE

**2012 NEAFA/PRO-DAIRY Herd Health & Nutrition Conference**  
**April 3 (Syracuse, NY) and April 5 (West Lebanon, NH)**

### Speakers and Topics:

1. Nina von Keyserlingk, University of British Columbia — Cow Comfort Audits
2. Heather Dann, Miner Institute — Fresh Cow Nutrition and Management
3. Bill Weiss, Ohio State University — New Research in Macro- and Micro-mineral Nutrition
4. Trevor Devries, University of Guelph — New Concepts in Feeding Dairy Heifers



# SOUTHERN EXPOSURE

The Bride and I arrived in Virginia in mid-November for what we hope will be a mild winter. While we are in the same residence as last winter and have the same street address and ZIP code, the USPS is changing our mailing address from Richmond to North Chesterfield. We don't know why; maybe it's because we live a few miles south of the city, in the town of Chester. But we're used to address changes, having gone through three in the 40 years we lived in beautiful downtown Peasleeville (NY) without ever moving. Maybe with it's the myriad financial problems the USPS has taken an equity position in a company making mailing labels...

We didn't have our first frost at Oak Point until October 27th and we were still picking summer squash in mid-October, but there was just enough cold weather in early November to remind us why we now spend winters down here. You don't hear the terms "wind chill" or "blowing and drifting snow" in eastern Virginia, and if you were to inquire about installing a block heater in your car you'd get some strange looks. Snow or the mere mention of it is cause for mass panic, and milk, bread and similar foodstuffs go flying off of store shelves, much to the amusement of transplanted Northerners. "Why are the schools closed today?" "It might snow." "But the roads are clear and dry and it's not snowing." "Yeah, but it might."

Even if it does snow here it will probably affect T.B. more than me since I'm in South Carolina, Pennsylvania and

California for both work and play for all but a few days from late November until mid-December. But she can't complain — I bought her a new snow shovel just last winter.

Questions continue to come in from farmers and other agricultural professionals. Here are a few recent ones:

- I have a few tons of potash left that I want to spread now to make room for other stuff. Can I do so safely? Yes, but avoid spreading on snow or on frozen, sloping fields. Potash doesn't volatilize and it doesn't leach (except on some very sandy soils), so runoff is the main problem. First choice would be alfalfa or alfalfa-grass fields since alfalfa is a heavy user of potassium.

- Here's a photo of a grass growing in one of my clients' fields. Can you identify it? The grass looks like it's been through both the wash and spin cycles in a washing machine, so it's hard to ID it from the photo. Perhaps if I could see a specimen...

- One of my clients has some BMR sorghum-sudangrass that got frozen. What should he do with it? A key question: Did it rain on the crop after it was frosted? Because if it did, some (much?) of the water-soluble nutrients could be lost. Turns out it was rained on, so (assuming the farmer listens to us) he'll harvest it as baleage and feed it to heifers instead of milk cows.

— E.T.

# COW COMFORT, Continued from Page 1

and greater dry matter intake which translates into more milk production (for Holsteins, 1 lb of dry matter intake translates into 2 lb of milk).

- Lameness results in a loss of nearly 2000 lb/cow/yr of milk annually, greater culling rate, and reduced fertility.

- As bunk space decreases from 24 to 12 in/cow, % of cows pregnant by 150 days in milk decreases from 70 to 35%. Also, conception rates are reduced with higher stocking densities. Given the value of a pregnancy is ~\$300 this is an important, and often overlooked, effect of overstocking.

The list could go on, but it is clear that there are very real economic consequences associated with improvement (or neglect) of cow comfort. Research makes it clear that there is a predictable link between management, cow behavioral responses, and productivity and health. Now is the time to take advantage of what we know about improving cow comfort to improve the farm's bottom line.

— Rick Grant  
grant@whminer.com

## CROP CONGRESS 2012 AT MINER INSTITUTE

Wednesday, February 22, 2012

Miner Center Auditorium, 586 Ridge Road, Chazy

Contact Eric Young, young@whminer.com for more info.

# REPRO, Continued from Page 6

month (cows + heifers)

Using herd DHIA records, plot calvings by month to determine if farm is meeting this target. This plot will also illustrate seasonal impacts on reproductive efficiency and areas of opportunity for improvement.

To evaluate the three herds presented in the graph, a line is drawn to indicate the goal of 10% of milking herd size calving each month. It appears that Farm A fails to meet the goal 6 months out of the year, indicating a potential reproductive problem on the farm that warrants further investigation. All herds experience a substantial drop in calvings during the months of March, April and May. This translates into breedings that would have occurred during June, July and August indicating that heat stress, may have been a contributing factor to reduced fertility and warrant an evaluation of heat abatement systems. Other contributing factors should also be considered such as cropping activities that may have resulted in reduced labor for heat detection in the herd.

Obviously, this simplified method of evaluating reproductive performance in dairy herds has limitations. It is not applicable to herds bred for seasonal calvings and would need to be modified for herds with higher cull rates. However, I think it's a useful tool to quickly assess whether severe reproductive problems exist in a herd and doesn't rely on me carrying a repro lingo dictionary to class!

— *Katie Ballard*  
*ballard@whminer.com*

## NNY Crops Management School

### Clinton/Essex Counties

Class date: Tuesdays, Jan. 31 — Mar. 6, 2012

### Franklin County

Class date: Wednesdays, Feb. 1 — Mar. 7, 2012

### St. Lawrence County

Class date: Thursdays, Feb. 2 — Mar. 8, 2012

### Jefferson/Lewis Counties

Class date: Fridays, Feb. 3 — Mar. 9, 2012

Six weekly sessions are from noon until 3 p.m. in each location.

This program is geared toward farm owners and employees that are directly involved in the management of crops on the farm. It is designed for individuals that want to gain a better understanding of crop production principles and improve their farms cropping operation. Earn a certificate of completion, and each participant who signs up for the entire course will receive the 2012 Cornell Guide for Integrated Field Crops Management.

**Registration is \$100 for all six weeks or \$30 per week for week 5 and/or 6.  
Please register by Jan. 20, 2012.**

### For more information and to register:

#### Clinton/Essex County

Contact Anita Deming, 518-962-4810

#### Franklin County

Contact Rick LeVitre, 518-483-7403

#### St. Lawrence County

Contact Brent Buchanan, 315-379-9192

#### Jefferson/Lewis County

Contact Mike Hunter, 315-788-8450 or Joe Lawrence, 315-376-5270

## RESEARCH SUMMARY

During the last year of alfalfa production, where will you get the most bang for your potassium fertilizer buck: By applying it to the alfalfa, or during the first year of corn production? University of Minnesota agronomists examined this question via three years of on-farm trials involving 10 fields with medium soil test K levels. Application of potassium during the last year of alfalfa production had no effect on yield or forage quality,

even though tissue K increased with fertilization so it was obvious that the potassium was plant-available. Regardless of how much potassium was applied to the alfalfa during its last year of production, application of potassium to first-year corn increased silage yield by an average of 8%. Based on this research it would seem best (at least on medium-K soils) to apply potash to corn instead of during the last year of alfalfa production.

# MANAGING FOR SUCCESS

In recent weeks I have been contacted by a dairy farmer frustrated with a new employee not “catching on to” how to proceed when a cow has mastitis, an employee who asked, after over a week of work, whether he gets a day off and what his pay rate is, and a manager who noticed an employee of several months wiping off the teat-dip within seconds of applying it. These three situations, through good communication, were easily addressed by reviewing the protocol for mastitis detection, clarifying time off and pay, and explaining the importance of leaving the disinfectant on for at least 30 seconds. While these situations were easily addressed, I have seen similar situations result in a farm having to dump a tank of contaminated milk, employees leaving positions soon after arriving, and increased incidences of mastitis on farms. To reduce the likelihood of similar situations occurring on your farm I recommend a pro-active rather than re-active labor management style.

Above and beyond the actual act of ‘farming’, a successful farm business depends on the farm owner(s) and/or manager’s ability to manage one’s farm employees. Between planting and cropping, spreading manure, machinery and farm buildings upkeep, dairy herd management and the many other activities a dairy farmer is responsible for, time is scarce. With a busy schedule, finding a gap in activities that allows you to develop and put systems in place related to labor management is difficult. Therefore, it is essential that you proactively designate time to do just that. Agricultural labor management consists of decisions on the farm related to who, what, where, when, why, and how work will happen effectively *and* efficiently. Whether the dairy farm has been in operation for generations or you are a new farmer, it is important to have a labor management system that includes hiring, training, and communication strategies.

While there are many components to developing and implementing an effective labor management plan, let’s focus on three that address the situations described at the beginning of this article: the job description, written protocols, and routine meetings. A job description is essential for many reasons; identifying the type of employee desired for the position, providing a potential or new employee with a full understanding of his or her responsibilities, the compensation and benefits, and identifying training needs. A written job description in the native language of the potential or new employee is critical. In addition to ensuring the employer has explained the job and benefits it also ensures the employee understands the expectations of the job he or she is accepting and gives both of you a point of reference if there is ever a question of job responsibilities.

Written protocols, such as mastitis detection/treatment and milking procedures, should provide the details of the employee’s specific responsibilities. Having written protocols allows the farm owner or manager to train each new employee consistently and thoroughly, provides employees with a written reference that can be used when in doubt of how to proceed in certain situations, and ensures that there is consistency between employees in treatment and milking patterns. Standard operating procedures can be written in many different ways such as basic steps, a flow chart or decision tree, or with graphics. Successful protocols are written in the native languages of the employees that will be following them.

Lastly, but often most important is holding routine meetings to connect with, motivate, train, and receive feedback from employees. Ideally, farm owners and/or managers should meet with employees monthly to touch base regarding any updates, changes, and concerns related to day to day farm operations. New or further training on topics pertinent to

the jobs performed or cross-training that improves employees’ depth of knowledge and ability to perform a greater number of tasks can be incorporated into scheduled meetings as well. While protocols and demonstrations teach an employee how to complete certain tasks, equally important is the explanation of why a task needs to be done a certain way; comprehensive training includes the reasons behind the methods. Monthly meetings provide a good opportunity to review written materials such as a job description or parlor protocol with the employees currently performing the job as they might have important suggestions or feedback. Those who employ native speakers of other languages need to make sure these meetings are interpreted. Regardless of employees’ nationalities a key component to successful routine meetings is the inclusion of positive feedback and morale building so that your employees are recognized and validated for the important work they do for you.

In the examples of the farms cited at the beginning of this article, job descriptions, written protocols, and routine meetings could have pre-emptively addressed the employee remembering the mastitis detection protocol, the employee’s understanding of pay and benefits, and the employee’s knowledge about why it is important to use the teat-dip according to protocol. Pro-active labor management strategies on your farm could translate into both time and economic savings as they can reduce the likelihood of dumping a tank of contaminated milk, losing an employee due to a misunderstanding about compensation and schedule, and inconsistencies in the parlor that lead to poor udder health. For more information and resources about dairy labor management, visit <http://www.uvm.edu/extension/agriculture/faccp/>

— Naomi Wolcott-MacCausland  
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**ENJOY!**

**From everyone at Miner Institute,  
have a safe and happy holiday season.**



### *Closing Comment*

A clear conscience is usually the sign of a bad memory.

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