

# FARM REPORT



## In This Issue:

Will Histidine be Limiting in Your Lactation Diet?	2
The Funding of Ag Research	3
Time for Some Hard Culling	4
Why Do Some Fresh Cows Experience SARA?	5
Update on NY's Nutrient Management Standard	6
What's Happening on the Farm	7
Labor Lite; Nitrates Revisited	8
2012 Penn State Dairy Nutrition Workshop	9
Corn Harvest Update; Copper Sulfate & Footbaths	10
Education Fulfills Miner's Vision; Notable Quotes	11

## FROM THE PRESIDENT'S DESK — FOOD FOR THOUGHT

In the August Farm Report I posed a series of questions to challenge our thoughts on agriculture and society. A number of readers have asked me what my answers to these questions would be. So, this month I've added my own brief responses as more "food for thought."

- *Do we in the U.S. feed ourselves only? Can we (or should we) feed the world?*

The answer to this question is a matter of opinion – but it has long been the rallying cry for US agriculture to invest in advanced technologies that increase productive efficiency and output per acre or animal. Currently, one U.S. farmer produces enough feed/fiber for about 155 people and productivity per man-hour in agriculture has increased by a staggering 700% since 1950! A survey conducted last year found that 40% of US consumers felt that American farmers should not be responsible for addressing world hunger. A majority of consumers in fact felt that it is more important for the U.S. to teach developing nations how to feed themselves rather than exporting food to them – that is food for thought.

If you do think we have a challenge to feed the world (I fall squarely in that camp), then here's the challenge: By 2050 there will be ~9 billion people and we will need to grow more food in the next 50 years than has been produced in the last 10,000 – essentially 70-100% more

food than we currently produce. And to preserve our planet, we also need to freeze the environmental footprint of food production. How can we hope to do this without advanced technologies?

- *Some contend that conventional agriculture is not sustainable, but organic agriculture cannot produce enough food – what does the science say? By the way, organic farming could feed Europe and America – is that good enough?*

Some components of modern agriculture are not sustainable long-term, but these can be fixed. It is a certainty that organic agriculture cannot produce enough food to feed the world. A report in *The Economist* last year calculated that if we went entirely organic, we could produce enough food to feed the U.S. and European populations, but not the entire world – the population is too dense, too great. So, my question to those who only support organic production: Who should leave the planet?

- *Jason Clay of the World Wildlife Fund asserts "We cannot abandon modern genetics and technology ... any thinking environmentalist would want to see more intensification of agriculture." Why does a wildlife advocate embrace intensive farming?*

See **FOOD**, Page 4



# WILL HISTIDINE BE LIMITING IN YOUR LACTATION DIET?

Histidine (His) is one of the essential amino acids (EAA) for dairy cows. Since corn is rich in His, traditionally, His-deficiency is rarely considered in a typical corn-based diet in the U.S. dairy industry, especially as dietary protein was provided in excess in most cases. However, the growing concerns of environmental N emission and the continuously rising price of corn pose increasing pressure to push down the edge of dietary protein and starch levels.

“How low can it reach without compromising milk yield” may be as important a question as “how high can my cows produce?” to many dairy farmers now. Alternative feeding strategies have been developed in face of new challenges: 1. Utilizing low protein diet with supplementation of rumen-protected amino acid (RP-AA), predominantly RP-methionine (RP-Met) and RP-lysine (RP-Lys), to increase dietary N efficiency. 2. Increase the use of byproduct feeds to partially replace the grain and protein feed.

*Should mitigation of diet formulation draw our alertness to the dietary His level?*

A Penn State research group recently evaluated the effects of combined supplementation of RPMet, RPLys and RPHis in a metabolizable protein-deficient (DMP) diet on milking performance (Lee et al., 2012). Forty-eight early- to mid-lactating Holstein cows were enrolled into 4 treatment groups: 1. adequate-MP diet (AMP), 2. DMP diet, 3. DMP diet with RP-Met and -Lys (DML), 4. DMP diet with RP-Met, -Lys and -His (DMLH). With the exception of MP (~320 g/d less

**Table 1.** Dry matter intake (DMI) and milking performance (Lee et al., 2012)

Item	AMP	DMP	DMPLM	DMPLMH	P-value
Dry Matter Intake (DMI), kg/d	24.5	23.0	23.7	24.3	0.06
Milk yield, kg/d	38.8	35.2	36.9	38.5	<0.01
Milk true protein, kg/d	1.13	1.01	1.10	1.14	<0.01
MUN, mg/dL	13.0	10.3	10.1	11.1	<0.01
Urinary urea N, g/d	104	47	41	49	<0.01

**Table 2.** His, Met and Lys content (as % of total EAA) in milk and feed ingredient (NRC 2001)

% of EAA	Milk	Rumen Bacteria	Alfalfa Silage	Corn Silage	Corn grain	Canola Meal	Soybean Meal	Blood Meal	Corn DDGS
His	5.5	4.0	4.7	5.7	7.8	6.6	6.1	11.3	6.6
Met	16.0	15.8	12.1	7.9	7.1	13.2	13.9	15.9	5.9
Lys	5.5	5.2	3.8	4.8	5.3	4.4	3.2	2.1	4.8

than AMP diet), the DMP diet provided nutrients to meet requirement of cows yielding milk of 40 kg/d with 3.6% fat and 3.1% true protein. Table 1 listed part of the results of the study. The main take-home messages of the study were: 1. DMP diet decreased DMI as well as the milk yield and milk protein production compared with AMP diet; 2. DMI, milk and protein yield was only fully recovered to the level of the AMP group when all three EAA were supplemented; 3. His became limiting when dietary MP was insufficient. Although MP deficiency is unlikely the case for most lactation diets in commercial farms, it may happen for most high producing cows during the postparturient transition period due to insufficient feed consumption. It may be worthwhile to try to put some blood meal (high in His content) in the diet rather than supplementing RP-Met and -Lys products only during this crucial period.

In a proceeding review paper, Dr. Chalupa and Dr. Sniffen suggested that EAA should be considered deficient when it is less than 85% of requirement (Chalupa and Sniffen, 2010). Based on this criterion, His is most likely to be limiting when diet forage quality is poor (17%CP, 46%NDF for alfalfa silage, 40%DM, 45%NDF, 1.15Mcal/

kgNEL) and soybean meal, canola meal and/or DDGS is the primary protein source, which are low in His compared with His content in milk protein. Based on the most recent USDA Crop Progress Report (Sep. 17, 2012), 50% of harvested corn so far was rated from very poor to poor compared to 21% of the previous year's crop as a consequence of the severe drought in the Midwest. Therefore, even corn based diet may not provide sufficient His, and more close attention should be paid to your corn-silage quality next year. Information for His content in main feed ingredients is provided in Table 2 for reference.

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

*\* References:*

Chalupa, W., and C. Sniffen. 2010. Balancing for amino acids beyond lysine and methionine. Proceedings of Cornell Nutrition Conference.  
 Lee, C., A. N. Hristov, 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:in press.

# THE FUNDING OF AG RESEARCH

In the March Farm Report, I asked our readership who they thought should fund various types of agricultural research. I only received a couple of responses to the survey, a few commentaries about research funding and a few sent additional resources on the topic of research funding.

Firstly, Who should fund ag research? All of the survey respondents (n=2) indicated that private industry should fund product development and assessment with the final assessment of the products being conducted by public agencies such as cooperative extension/universities or independent, private research institutions such as Miner Institute. The survey respondents indicated that research evaluating management strategies that will improve farm profitability/sustainability should be funded by public agencies such as cooperative extension/universities or private entities such as Farm Credit or Miner Institute. According to our survey respondents, research conducted to evaluate the environmental impact of agricultural practices and development of strategies to curtail agriculture's impact should be funded by private and government agencies such as EPA and DEC.

The second part of the survey asked, What do you value most when presented with data generated from research? The individuals who conduct the research was valued by most survey respondents, while the funding source was least valued. One individual, however, had a cynical stance on this subject, "Whenever money or funding is involved that too often taints the results."

So, the question remains, Who should pay for research to be conducted?" In the September 10th issue of Hoard's Dairyman, "Ag Research Funding is Faltering" was a featured article. It highlighted the decline in state and federal funding for agricultural research in plants

and natural resources (which include soils) as well as animal agriculture. As public funds decline, private funding for research has increased. According to an article passed on to me by one of the survey respondents, the amount of agricultural research financed by industry surpassed that paid for by the government in the early 1980s. (The Chronicle of Higher Education, April 15, 2012) [http://chronicle.com/article/As-Beef-Cattle-Become/131480/?sid=wb&utm\\_source=wb&utm\\_medium=en](http://chronicle.com/article/As-Beef-Cattle-Become/131480/?sid=wb&utm_source=wb&utm_medium=en)). The focus of this article was on whether unbiased research could be conducted with agribusiness paying the bill. The author of this article, Melody Petersen, insinuated that all companies require scientists to sign confidentiality agreements before they undertake corporate-sponsored studies, which make it difficult for the public to learn about unfavorable research that has been "quashed." She goes on to state, "*Universities have fought back, if lamely: For example, at Purdue University, the master research agreement includes a clause stating that the university must be allowed to publish the results from a corporate-financed study. But the agreement also gives the company 30 days to review the scientists' intended publication and allows executives to remove anything they deem to be confidential corporate information. If scientists disclose that information, they can be sued.*"

Unfortunately, her perception of privately-funded research is skewed. At Miner Institute, the majority of our research is privately funded by agribusinesses. Early in the development of the research program here, we established a clear policy for confidentiality. If we conduct research on a product that is commercially available, we reserve the right to publish the results. If a company is in the process of developing a product for commercial use, we will conduct the study under a confidentiality agreement.

Over the last 20 years (oh my gosh, I can't believe it's been that long) we had only one company that I am aware of that decided not to conduct the study at Miner Institute because we wouldn't conduct it confidentially. I feel this policy has served us well, since some companies have come to us under the advice of their clients saying, "If Miner says your product works then I'll buy it," obviously, valuing the integrity and quality of the dairy and research staff here.

While holding fast to our confidentiality policy, we also feel it is important to work collaboratively with our funding sources. Funding a well-designed research project is a substantial investment and can range from \$20,000 - \$200,000. We allow our funding sources 60 days to review the results of the study before we make the results publicly available. This seems reasonable when you consider the investment that was made. Often times there are questions about results that we discuss collaboratively with the funding source but I can't recall any instance where we have been asked to "quash" the data or not to disclose any information let alone be sued. I do, however, recall several instances when we voluntarily chose not to publish the results of a study because we felt the conditions in which a study was conducted were not ideal or were compromised (milkfat depression, or mastitis outbreak) and may have impeded our ability to detect a treatment response.

Regardless of whether research is privately or publicly funded, how that information is presented and interpreted once it enters the public sector becomes the greater issue. Presentation of partial data from a project is more of an issue than who funded it...but I'll leave that topic for another Farm Report.

—Katie Ballard  
[ballard@whminer.com](mailto:ballard@whminer.com)

# TIME FOR SOME HARD CULLING?

Most farmers with grey hair and wrinkles probably remember the “Dairy Diversion Program” of 1984-85, a government-funded supply management program through which participating farmers received payments of \$10/cwt. for reducing the volume of milk they marketed by 5 to 30% below an earlier base period. It was well-intentioned but turned out to be a failure. (My mother used to say that “Hell is paved with good intentions,” usually referring to one of my frequent transgressions.) To reduce milk production most participating farmers culled tail-enders, low producers, hard breeders, and cows with a history of mastitis problems. The farmer was left with a herd that was smaller but younger and healthier,

and since there was the same amount of feed and labor for fewer cows, the remainder of the herd got plenty of feed and TLC. The result, which surprised nobody except apparently USDA, was: More milk per cow! In fact, many farmers soon recovered all the milk they lost and had to cull even more heavily to qualify for the program.

The summer-long drought reportedly affected 85% of the U.S. corn crop and over 60% of hay crops. As a result many dairy farmers find themselves critically short of forage heading into the winter. Grain prices are through the roof, so replacing forage with grain isn't an economical option. It can be dangerous when an agronomist

starts meddling with herd management issues. However, this isn't a simple issue of culling decisions (the issue is simple even if the decisions are not), but making the forage supply more closely match herd size. By now you should know how much forage you'll have for the coming six months or so, until first cut in 2013. Work with your dairy nutritionist and your creditor in making culling plans. Your creditor may have considerable interest in your culling decisions, especially if they significantly impact milk production — and your ability to make debt payments.

— Ev Thomas  
ethomas@oakpointny.com

---

## FOOD, Continued from Page 1

Dr. Clay is senior vice president for the World Wildlife Fund – he is a strong proponent of intensified agriculture so that overall land use for food production and input resources like water can be minimized and more wildlife habitat can be spared. I think he is right: with less intensive agriculture, we will need more acres for food production which translates into less wildlife habitat.

- *What is “sustainability” as applied to agriculture? Is it environmental stewardship versus farm economic viability – either/or? Is it farm productivity versus food safety – either/or? Is it quality of life for farmers versus quality of life for society – either/or?*

The point of this question is that none of these issues have to be “either/or.” A sustainable agricultural system must ensure farm productivity and food safety, sound environmental stewardship, and farm profitability as well as quality of life for the farmer and the consumer (i.e. society). Importantly, we cannot insist

that farmers use 1950s-era technology (or earlier) while the rest of the world takes advantage of the latest advances in technology.

- *Half of the world's population lives in urban areas – how will they be fed?*

This is a question that still needs an answer – but it is a fact that won't change. I cannot see a way to feed these urban people without new technologies and intensive agricultural approaches. Rooftop gardens are nice, but they won't solve the entire puzzle!

- *Must we become vegetarians to save the planet? What do we owe animals that are raised for food?*

My main point here is that animal production for food is just as sustainable on a global basis as a non-animal food system – that's what the science says. We all need to be concerned with ensuring animal well-being, but animal rights activists are simply using the subject as a stalking horse to attack the livestock industries and

move toward a vegan society.

- *Which beverage has the smallest carbon footprint based on nutrient content – bottled water, soft drink, beer, red wine, orange juice, soy drink, or milk?*

Milk wins!

- *What are the consequences of a cheap food policy in the U.S. – is it the right direction?*

As far as I know, there is no “right” answer to this one. We certainly have the cheapest food in the world – about 10% or less of our income is spent on food in the U.S. As a comparison, India spends 50% of its income on food. This policy has driven farmers to become ever more productive and efficient to survive and be profitable. What does the future hold? Farmers' opinions on this question will be more valuable than mine!

— Rick Grant  
grant@whminer.com

# WHY DO SOME FRESH COWS EXPERIENCE SARA WHILE OTHERS DO NOT?

Fresh cows are susceptible to metabolic disorders and compromised rumen function during the transition period. A common strategy to reduce metabolic disorders associated with the negative energy balance after calving, such as ketosis and fatty liver, is to provide more fermentable carbohydrates in the fresh diet relative to the dry diet. However, large changes in dietary composition and dry matter intake during the transition period increase the susceptibility of cows to subacute ruminal acidosis (SARA). SARA is characterized by repeated bouts of low ruminal pH (< 5.8). Bouts can last for several minutes or several hours. The bouts that last >3 hours can negatively affect the ability of rumen epithelium to absorb volatile fatty acids (VFA) and decrease fiber digestion through changes in the microbial population. Signs of SARA are often varied and ambiguous, but can include decreased or fluctuating intake, decreased cud chewing, inconsistent manure ranging from stiff to loose, high cull rates due to vague health problems, milk fat depression, poor milk production, and lameness.

The risk for SARA is not the same for all cows. Interestingly, cows show tremendous variation in the degree of SARA they experience under the same management and feeding program.

The variation in severity of SARA can be caused by many factors described as physiological, behavioral, and microbial differences among cows. Specifically, those factors include:

1. The rate of VFA absorption from the rumen
2. Osmotic pressure of ruminal fluid
3. Integrity and health of the ruminal epithelium
4. Genes regulating VFA absorption and metabolism
5. VFA metabolism by epithelium
6. Eating behavior
7. Salivation rate and ruminal fluid outflow
8. Ruminal microbial community composition

Surprisingly, very little research has been done to characterize shifts in the ruminal microbial community composition during the transition period. Recent work from Canada demonstrated that heifers fed either a low- or high-concentrate diet before calving and the same fresh diet after calving had differences in their severity of ruminal acidosis. However, the variation in the severity of ruminal acidosis was independent of dietary treatment, intake, and total VFA concentration. Also, the ruminal bacterial community composition was not influenced by dietary treatment or period (before and after

calving). However, some animals had greater shifts in the bacterial community composition than other animals before and after calving. The animals with greater shifts did not relate to either a greater or lesser risk of ruminal acidosis after calving.

Until we understand more about the ruminal microbial population and its interactions with the cow, proper dietary formulation and good feed bunk management will continue to be critical for the prevention of ruminal acidosis in our fresh cows. The risk of SARA can be minimized by 1. proper formulation of diets to optimize intake of fermentable carbohydrate, intake of physically effective fiber, and endogenous buffering capacity, 2. consistent delivery of diets with minimal variation in composition, 3. continuous access to feed so meals are small and regular and thus avoiding slug feeding, and 4. inclusion of appropriate feed additives, such as buffers, that prevent low ruminal pH.

— Heather Dann  
dann@whminer.com

\* *References:*  
Mohammed et al., 2012. J. Dairy Sci. 95:in press.  
Penner et al., 2009. J. Dairy Sci. 90:365-375.

## Come visit the Heart's Delight Farm Heritage Exhibit at Miner Institute!

The exhibit season has just one month left!

Open 9 a.m. to 3 p.m. weekdays through the end of October.



# UPDATE ON NEW YORK'S NUTRIENT MANAGEMENT STANDARD

The NRCS-New York Standards Committee has adapted the January 2012 National NRCS Nutrient Management Conservation Practice Standard (Code 590) for New York conditions and is seeking review and comments on its current draft. The 590 Standard describes the suite of agronomic and conservation practices that CAFO farms and farms receiving state or federal monies for best management practices must adhere to. The Committee worked with technical staff from NRCS-NY, NYS Dept. of Environmental Conservation, NYS Department of Agriculture and Markets, the Conservation District Employees Association, Cornell University, and Cornell Cooperative Extension to develop its first draft. Individual states are currently reviewing the national 590 standard and adapting it for state-specific conditions. States have until

January 2013 to finalize and adopt the new 590 Standard.

The Draft NRCS-NY 590 Standard is available for download and NRCS is accepting comments on the Draft until October 5. The current draft is based largely on the language set by the January 2012 National 590. The Draft NRCS-NY 590 also utilizes many concepts from the current NRCS-NY 590 Standard (April 2007) and adds clarification in several areas for implementation in New York State. The new 590 will have an enhanced focus on protecting air and water quality. Some of the highlights of the new standard include tighter restrictions on manure set back areas from watercourses, a focus on improved nitrogen efficiency in corn production, and a greater emphasis on managing manure applications on frozen/snow-

covered soils/saturated soils compared to the current 590 Standard.

If you're a farmer or work with farmers who will be affected by this new standard, now is your chance to be proactive and voice your opinion. The goal of the new standard is to improve agricultural sustainability through the use of the latest best management practices, but it is also important that the Standard be practical and feasible for farms to implement. Therefore, your feedback on this document is critical. The current 590 Standard and the Draft 590 Standard can be downloaded here: [http://www.ny.nrcs.usda.gov/news/releases/draft\\_nutrient\\_management\\_standard.html](http://www.ny.nrcs.usda.gov/news/releases/draft_nutrient_management_standard.html)

— Eric Young  
[young@whminer.com](mailto:young@whminer.com)

## FALL IS IN THE AIR



On a recent cool, crisp late summer/early fall morning, Miner Institute milker Adam LaCount remarked:  
"It's mornings like this when coffee goes down real good."

Enjoy your morning (or afternoon or evening!) coffee and have a great fall!



# WHAT'S HAPPENING ON THE FARM

Last month Margaret, our year-long dairy intern, wrote about her week taking care of herd health while I was on vacation. Her article was meant to be funny but it also underscored the importance of the educational component at Miner Institute. The mission of Miner Institute is three-fold — research, demonstration and education; this mission directs many of the things that happen on the dairy. While we are busy with normal farm chores — feeding, milking, calvings, crops, etc., we are also busy educating students.



At Miner we have many groups of students year-round involved in various programs: dairy, equine, research, and environmental sciences. The Miner dairy and crops crew are closely involved with the dairy students. From January to May, a group of dairy management students (most from the University of Vermont) come to Miner for a semester of applied dairy education. During the summer we have four farm management students, college juniors or seniors who are pursuing a career in dairy (or at least considering it). And then we have our year-long dairy intern who is involved in all aspects of the farm.

Our summer students get an education unlike anything they've had in the classroom! Working alongside a full-time employee, they rotate through five different jobs on the farm — milking, calves, herd health, feeding, and crops. This is one-on-one training, practical, get your hands dirty education on how a dairy farm operates. It isn't all physical labor; we talk about different management issues throughout the summer and about their future careers and opportunities in the dairy industry. Sometimes people comment about all

the extra help we get each summer, referring to the summer students, but have you ever hired and trained four new people at the same time, half of them having never worked on a farm before? Yeah, it is extra work when the students arrive but that is part of what we are about — dairy education! Teaching takes time and patience. First there is explaining the task — what to look for in a fresh cow exam, how to safely drive a tractor and operate a piece of equipment, the protocol for milking prep. Then you work together, taking care of daily chores and emergencies that arise, allowing the students to take on more responsibility, as they are able. For the students to really learn, we have to stand back and let them try things on their own — giving an IV, driving the skidsteer to push out yesterday's feed refusals, pail training a calf, driving a tractor and merging hay, etc. Sometimes teaching can be challenging and a test of patience, but it is really rewarding to see how much the students learn by the end of the summer — that makes it all worth it!

The year-long dairy intern position is similar to the assistant herdsman and as such, has a lot of responsibility by the end of the year. When a new intern

comes, there is a lot of explaining, talking through management decisions, showing the intern where things are (pens, gates, drugs, etc) and helping them get used to the weekly routine jobs and our farm protocols. I work very closely with them and over the years have learned an important lesson of working with interns and other employees — trust. That trust is built one day at a time as we work together, as they learn the skills to do the job, as we encounter different situations in the herd. As they learn and

grow and as trust is established, we let them do jobs independently, make decisions on their own and take care of the herdsman responsibilities when I am not around or busy somewhere else on the farm. And that requires good training, a responsible intern and trust that they will complete the job and ask for help if they need it. I cannot always hold their hand, micromanaging and making every decision for them. Taking on responsibilities in the herd builds confidence and helps them develop skills for their career and is what the internship is all about!

Training, patience, trust and responsibility are important for our whole dairy staff. A capable, knowledgeable team of employees is the foundation of a productive dairy. Steve says that everyone “has to have a reason to come to work in the morning” — they contribute something to the farm. During the year, the dairy intern becomes part of our team. I told Margaret that I would be more than happy to go on vacation again if she wants another strength training week for her stress muscles! She is up to the challenge!

— Anna Pape  
pape@whminer.com

# LABOR LITE (Commentary)

Following is an actual conversation at a recent Richmond, VA “Job Fair” at which my son Jim represented his business Key Web Concepts, Inc.

**Prospective applicant:** Hi, what does Key Web do?

**Jim:** Website design and graphic design.

**P.A.:** Oh, cool! I love computers. And I am awesome at online computer games. I could really help your company!

**Jim:** Do you have a degree in graphic design or web design?

**P.A.:** Uh, no, but I’ve always wanted to. Do you teach people that stuff, ‘cause I’m a quick learner? I beat the game “Halo” in like three weeks.

**Jim:** Wow, congrats. But we really are looking for people with a degree.

**P.A.:** Can I apply?

**Jim:** Uhhh, sure, just go online on our website and complete the application.

**P.A.:** Awesome! I know I’ll fit in great. See ya!

This reminded me of the farmer who was interviewing several young men for work on his farm. He asked one lad, “You say that you have no experience working on a farm, yet you’re asking for much higher wages than the other fellows. How do you explain that?” He said: “Well, I figure that the work is a lot harder when you don’t know anything about it.”

There’s a serious message here. (I know, you probably were starting to wonder.) The national unemployment figures continue to be grim, but they’re

much worse for high school dropouts and only moderately better for those with a high school diploma. College graduates are much more likely to find a job, but what kind of job depends on the type of degree they have. A college degree is more valuable if the graduate actually learned a skill or acquired marketable knowledge during those four (or more) years. Many did not, which is why so many college graduates remain unemployed or underemployed. (How many went to college to become coffee house baristas for \$8 per hour?) Meanwhile, those with degrees from agricultural colleges are finding jobs in a variety of fields, and at competitive wages.

—E.T.

---

## NITRATES REVISITED

We covered this topic a couple of months ago but there are continuing concerns. That article contained the facts, while this one tends towards opinions based on almost 50 years of field experience.

For the number of times there appeared to be the right conditions for high nitrates in annual forages — primarily corn and sudan-sorghum — actual problems (at least in the Northeastern U.S.) have been quite rare. That’s for several reasons:

1. Most farmers don’t use enough nitrogen fertilizer to result in high nitrate levels. The fields most likely to get very high amounts of N are those that received heavy manure applications, but most of these applications were made during the previous fall so by spring most of the N isn’t where the roots of annual crops can reach it.

2. The silage fermentation process reduces

nitrates by 30 to 60%. That’s one more reason to wait until ensiled crops are completely “cooked” before feeding them. Cows (actually their digestive systems) hate rapid change, and switching from corn silage to fresh-chopped corn puts their “rumen buggies” (as Brother Sniffen calls them) in a bad mood. You don’t want unhappy rumen bugs in your cows.

3. Dilution may (or may not) be the solution to pollution, but it sure helps with high-nitrate forages. High forage rations are all the rage, but almost nobody feeds a ration consisting of a single feedstuff. Even so-called “high corn silage rations” rarely contain more than 50% corn silage on a dry matter basis. Therefore, the nitrates in the rare lot of corn silage that still has a high nitrate level after fermentation will be diluted by half or more by the other feedstuffs — usually containing little or no nitrate — in the ration.

4. Nitrates tend to concentrate in the bottom portion of the stalk. I certainly didn’t recommend that farmers attempt to reduce nitrate concentrations this year by high-chopping their corn! High chopping corn can be a good practice, but certainly not in a year when forage supplies are limited. However, many custom operators chop corn fairly high — 9 or 10” stubble height isn’t uncommon — so the decision often isn’t the farmer’s to make.

The results we’ve seen of corn nitrate analyses from the worst-affected areas of the Corn Belt show about one sample in twenty having a high nitrate level. And that’s before fermentation. However, if you have concerns about nitrate levels in any forage by all means have a nitrate test done. Test, don’t guess — but my guess is that the analysis will come back showing that there’s no problem.

— Ev Thomas

# 2012 PENN STATE DAIRY NUTRITION WORKSHOP

November 12 to 14, 2012  
Holiday Inn Harrisburg-Hershey Hotel  
Grantville, PA

This workshop provides applied dairy nutrition information and training to feed industry professionals. The preconference sponsored by Novus International will focus on cow comfort and removing barriers to better milk production. Other lecture topics include management of udder health, current issues affecting silage, and starch digestibility. Workshops will explore all these subjects and more; a wide variety of topics from precision technologies and information management to alternative forages, calf feeding systems, managing variation in diets, understanding animal behavior, and much more. Alltech will sponsor the Tuesday evening session with a look at dairy's carbon footprint and evidence-based nutrition. On Wednesday, breakfast sponsored by Multimin USA will include discussion of injectable trace minerals, and the post conference sponsored by Feed Components will explore amino acid nutrition for transition cows. Dairy and beef feed management planner certification training will be offered, and ARPAS exams will be available as well. The conference will be approved for continuing education credits for ARPAS members and veterinarians.

Registration cost is \$95 if you register before Monday, October 22, 2012. The cost increases to \$120 after October 22.

Learn more about this workshop at: [extension.psu.edu/dairynutrition](http://extension.psu.edu/dairynutrition)  
or contact Coleen Jones by phone at 540-997-5809 or email [cmj11@psu.edu](mailto:cmj11@psu.edu)

## Cornell Feed Dealer Meeting at Miner Institute Tuesday, October 30, 6 p.m.

### Speakers:

- Dr. Larry Chase, Cornell University
- Dr. Tom Overton, Cornell University

### Topics:

- Feeding considerations for 2012-13.
- NRCS Pilot Feed Management project – What Did We Learn?
- Nutritional implications for postcalving uterine health and reproduction.
- Key opportunities for the New York dairy industry.

For more information, contact Rick LeVitre, CCE Franklin County, 518-483-7403  
or Wanda Emerich, 518-846-7121, ext. 117

# CORN HARVEST UPDATE

As of September 19, we are still waiting to finish corn harvest. It is not the recent rain that has delayed our finish but rather the gap in planting that has resulted in a 10d delay in corn maturity. Recall we chose to stop planting corn in late May in order to harvest some higher quality early 1st cut haylage. At the time we were able to chop and ensile about 400T of high quality grass silage for milk cows. We just started feeding some and it tested at 18.8% protein (still waiting on NDF and NDFD numbers).

We finished chopping all our conventional corn hybrids a week ago as well as most of our BMR corn. About 60A of BMR remains that is testing at 27-29%DM with Koster tester. Much of this is the corn that was planted after early first cut harvest and some is a test plot of longer day corn. The problem is we do not have space to store what is still standing in a separate pile or bunker. We are faced with uncovering the BMR already chopped in order to cover with the remaining crop. We did sprinkle some propionic acid on the

surface before covering to help prevent surface spoilage for when we resume filling and packing. Hindsight tells us we should better plan our choice of corn hybrid maturities if faced with delayed planting in the future. Not only did we stop planting corn for about 1 week but the corn that remained to be planted was a 99d RM hybrid. It's what we had left.

Early results on yields are "ok." The final tons and T/A have yet to be calculated, but by looking at bunk fill and pile size, we yielded similar to slightly less than usual for us. We also planted 30 fewer acres to corn this year. However, from field to field, DM was quite variable (32-40% DM) due to the combination of droughty conditions and varying soil types. Early starch analyses do not look great. Ears tended to be small, only 20-30% starch on some fields. So much for maximizing harvest of home grown energy as starch, hopefully the whole crop will test higher.

— Kurt Cotanch  
cotanch@whminer.com

# COPPER SULFATE AND FOOTBATHS

The September issue of *Agricultural Research*, a publication of the USDA Agricultural Research Service, contains an article titled "A Cautionary Note about Copper Footbaths for Dairy Cows." ARS soil scientists in Idaho have been studying the effects of copper sulfate on alfalfa. They found that copper sulfate had no effect on alfalfa growth at soil levels of up to 250 ppm of copper, but alfalfa growth stopped when soil copper levels reached 500 ppm. More ominously, they discovered that beneficial soil bacteria activity declined when the soil accumulated available copper levels over 50 ppm, and there was an indication that soil levels slightly over this resulted in alfalfa copper content that may be high enough to harm grazing livestock. (There are few clinical signs of copper toxicity in cattle other than sudden death, so prevention is the key.) While the researchers don't expect that dairies using copper sulfate would see any negative effects for at least 15 years, they recommend that producers should address this issue sooner rather than later.

If our readers will allow us a brief ego trip down Memory Lane: To the best of our knowledge the first anyone read of the potential copper problem on dairy farms was in the April 2001 issue of the Farm Report, and the first mention in the farm press (in both *Hoards Dairyman* and *Dairy Herd Management*) of copper sulfate disposal on cropland as a potential problem was either articles that we wrote or referred to the work on this topic at Miner Institute.

— E.T.



## SAVE THE DATE : DAIRY DAY 2012 at Miner Institute

Tuesday, Dec. 11, 2012

Featured speaker:  
Dr. Roger Cady, Elanco



Visit us online at [www.whminer.org](http://www.whminer.org)

# EDUCATION IS CRUCIAL IN FULFILLING WILLIAM MINER'S VISION

Education was highly valued by William Miner and comprises an important component of the mission and vision of Miner Institute. Educational programming at Miner includes an applied environmental science program; an advanced dairy management program; and summer experience internships in dairy farm management, equine management, and agricultural research.

Graduates of Miner Institute courses have gone on to obtain leadership roles in farming, agribusiness, and government. Approximately 50% of cows in Vermont and the North Country of New York are directly impacted by Miner alumni.

Students benefit from each programs hands-on approach to learning. Kevin Jacque spent a couple months this past summer at Miner as part of the Summer Experience in Farm Management program. He is currently a first year veterinary student at The Ohio State University. Kevin gives the program high marks in a recent reflection on the program.

“I applaud the institute for its vast dedication to the different areas of agricultural and environmental sciences, as well as its extension and research for the community and U.S. industries.”

Kevin aspires to be a food animal

veterinarian. He says that he enjoys dairy production, animal health, animal safety and welfare, and production agricultural management. “My hope for the summer experience in farm management was simple – to learn something new. Having some dairy background, I wasn't out to get everything and anything about dairy management, but the subtleties which are overlooked in an undergraduate education. I can say that the Miner farm management program met my expectations and more. It was a great topper to my dairy education sundae of undergraduate classes, trips, and work experience.”

— Rachel Dutil

*Learn more about Miner Institute's education programs at [www.whminer.org](http://www.whminer.org)*

## 2013 Herd Health and Nutrition Conference

**April 10 in Syracuse, NY and April 12 in West Lebanon, NH.**

Program Topics:

- Recent research on hypocalcemia and immunity. Dr. Jesse Goff, Iowa State University
- Group feeding of calves. Dr. Michael Capel, Perry Veterinary Clinic, Perry, NY
- Economics on the farm. Jason Karszes, Pro-Dairy, Cornell University
- Advances in corn silage. Dr. Randy Shaver, University of Wisconsin

## NOTABLE QUOTES

- They say you shouldn't say nothing about the dead unless you can say something good. He's dead. Good. - Moms Mabley
- Say what you will about the Ten Commandments, you must always come back to the pleasant fact that there are only ten of them. - H.L. Mencken
- Never go to a doctor whose office plants have died. - Erma Bombeck
- Behind every successful man is a surprised woman. - Maryon Pearson

The William H. Miner Agricultural Research Institute  
1034 Miner Farm Road  
PO Box 90  
Chazy, NY 12921



Non-Profit  
Organization  
U.S. POSTAGE PAID  
Chazy, N.Y. 12921  
Permit No. 8

Change Service Requested



## *Closing Comment*

We never really grow up, we simply learn how to act in public.

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

518.846.7121 Office  
518.846.8445 Fax