

# William H. Miner Agricultural Research Institute Farm Report



Chazy, New York 12921

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November 2004

## BUILDING A RESEARCH DAIRY FACILITY: FROM VISION TO REALITY

When I think of the year before starting construction on Miner Institute's new dairy barn, the primary image that sits on my mind is walking through a pasture where horses once roamed during the lazy summer months. We knew this was going to be a daunting task! Many critical decisions had to be made before this pasture became a dairy barn: Measuring and staking the site for sod removal; where to put all this material; where to get gravel for fill; excavation for the 6-million gallon manure lagoon; finding clay to line the lagoon; rerouting the natural water runoff; utilities; and securing a 100-year-old, 3-foot diameter clay culvert pipe that ran right under the lagoon.

Fortunately, we had the foresight to start much of this work a year in advance of building the dairy barn. The actual construction phase started in May 2002 and reached initial completion at the end of July 2002. Thanks to a tip from our forestry consultant, a ridge of land that ran through our property enabled us to mine all 15,000 cubic yards of gravel needed. As much as 4 feet of gravel was hauled onto some parts of the site. We also found clay on our property, and 10,000 yards were hauled in to line the manure lagoon. Never underestimate the cost of site preparation on a project of this magnitude! The cost of prepping the site ahead of construction was arguably one of the hardest accurate quotes to get.



The subsoil under our new manure pit didn't meet CAFO specifications, so we had to find clay elsewhere on the farm and spread about a foot of it on the bottom and sides of the pit.

Old Man Winter blew in and a deep blanket of

snow covered the site, which sat idle until spring rains ended and allowed construction to begin in May 2003. Talk about decision-making pressure! Marco and I launched into beating down the doors of the entire staff for help in constructing this new building. I wonder how many people Mr. Miner had



As you can see in this picture, a tremendous amount of fill was needed for the dairy barn site.

working for him when he built or reconstructed hundreds of buildings for Heart's Delight Farm in just eight years? We were excited to see the first poles going into the ground for the new dairy barn. Excavators got digging for footers and foundations that would support the barn that had mainly been visions and ideas until then.

We hired a Clerk-of-Works to oversee construction, which proved helpful when dealing with the inevitable "bumps" that ensued, but we still had to manage the job. Don't take this statement lightly! Many things had to be addressed daily as I performed the job of Project Manager. Hundreds of questions of what to do, where to go, and where can I find this or that would come up regularly.

Never assume anything! Always specify exactly what you want and this should then be followed up with a written reminder. Never start such an ambitious project without detailed blueprints. Conflict does occur and plans will be required: Depths of concrete, placement of gates, manure handling, and doors. All of these *must* be checked!

Our new dairy facility has been operating for six months now and is a pleasure. The dedicated effort and input of the dairy, maintenance, and research staff in dealing with the literally hundreds of prob-

lems during construction certainly took a huge load off my shoulders. Visions of a green pasture transformed into a state-of-the-art dairy research complex was something of a bittersweet experience. Of course, there will be further challenges along the way, but the satisfaction of seeing the complex construction completed is unrivalled.

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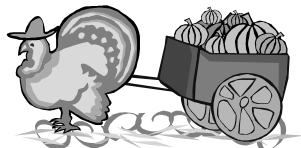
## 2004 FIELD CROPS: WHAT WENT RIGHT, AND WHAT DIDN'T

The last of the crops has been tucked away for the year, so it's time to reflect on what went right and what went wrong. Without fear of contradiction (after all, I am the editor), here goes:



What went right:

1. *Weed control in corn was terrific.* We used Roundup Weathermax + Prowl + atrazine for Roundup Ready corn, Prowl + atrazine, atrazine + simazine, or Lumax + atrazine for the rest. All worked great, and we had the best weed control in recent memory.
2. *No weed problems in alfalfa-grass seedings—* even though we didn't use any herbicide. We seeded on April 21 and 23 and let the early growth of the alfalfa get ahead of the annual grasses. Because we had good weed control in the previous several years' corn crops, we didn't have many broadleaf weeds either.
3. *Alfalfa heads into the winter in great shape.* Not only did we not lose any fields to winterkill, but one field staged something of a comeback in 2004. It was so badly injured from the rough winter of 2002-03 that we thought we'd have to plow it up. It improved throughout 2003 and yielded well this year, so we'll give it one more year.



What went wrong:

1. *Notill corn + waterlogged sod = disaster.* Our prior experiences with planting no-till corn into a fall-killed sod were very good. However, we normally take an August harvest before applying Roundup + 2,4-D so there's only 6" or so of grass re-growth. However, we didn't cut this field in August so there was a pile of grass that formed a thick mat. We had a hard time planting the field, then a torrential storm and much of the seed rotted in the furrow. How bad was it? About one-third of a normal crop, and of course it had to be some very expensive BMR seed.
2. *There's no such thing as a "small amount" of Ladino clover.* This past spring we made our first birdsfoot trefoil seeding in many years. Just for the heck of it we decided to add half a pound of Ladino clover per acre. It wasn't any more than half a pound because we only bought 5# for a 10-acre field. Not only did every single Ladino seed appear to germinate, but it must have brought friends. There's a good catch of trefoil, but it's hard to see for all the clover.

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YOU'LL PAY MORE IN  
2005 FOR CROP INPUTS,  
LESS FOR FEED



The good news for dairy farmers is that there's a huge corn and soybean crop. U.S. corn yields should average 158 bushels/acre, up a whopping 16 bu/A from 2003, and soybeans should average 42 bu/A, up 9 bu/A. October 2004 cash prices reflect these bin-busting crops: Corn \$1.77/bu. vs. \$2.02 Oct. 2003, and soybeans \$4.88 vs. \$7.08 in Oct. 2003.

The bad news is that crop inputs will cost substantially more, led by fuel and fertilizer prices. Higher fuel prices are a *fait accompli*. We'd also expect nitrogen prices to be a lot higher due to increased natural gas prices—and they certainly are—but phosphate and potash will also be somewhat more expensive in 2005.



## VET'S CORNER

A few cases of tail mange were noted during repro checks during this month's herd health visit. Since the vet is intimately involved with this end of the bovine anatomy while performing rectal palpations, she/he can be depended upon to bring it to the herds-person's attention. After repro work we walked the calves and pastured heifers and a conversation about the herd's parasite status ensued.

At a different farm's herd health visit this month the herds-person mentioned the great deal the farm got on a topical pour-on dewormer. Seems an attractive drug company sale rep was promoting deworming at the local feed store and convinced the herds-person of the value of deworming the herd. Unfortunately for the dairyperson, the sales rep did not offer to perform any diagnostic work to see if the free-stall herd was infested with internal parasites. If this dairy's milk tank does not take a boost or see an improvement in body condition score after deworming, it will be difficult for this sale rep to justify the sale.

We will take a different approach at Miner Institute. Before spending the \$11-13 per milking cow for deworming, we will first test at-risk groups for the need of deworming. Hutch calves are only exposed to parasite infestation in the maternity pen, so their exposure rate is expected to be low. Regardless of this low risk, feces from 6 hutch calves will be collected and evaluated at our office. Pastured cattle are at most risk of infestation so 6 growing heifers that have been on rotational pastures will be tested. Six fresh cows that spent part of their dry period on pasture will be collected. Finally, three animals from each farm that have been purchased will be tested. So for a \$120 lab fee, the farm will insure that a \$3,000 investment in pour-on is necessary and appropriate for each group.

Free-stall cows on confinement are at low risk to spread internal parasites. So if lab tests reveal no infestation, the farm can use a lower cost external parasite spray to control the spread of tail mange.

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## FOR SALE: HIGH CHOP CORN SILAGE

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Treated with *Lactobacillus buchneri*  
inoculant for extended face and bunk life.  
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## BROWN MIDRIB CORN:

### SO FAR, SO GOOD

Our BMR corn yielded very well on the three fields that weren't a total disaster (see "2004 Field Crops" article), just over 20 tons per acre or 10% less than our non-BMR corn. While there was some stalk rot in one of the BMR fields, we were able to harvest before any significant lodging occurred. In one replicated side-by-side trial with Syngenta N3030Bt, the 3030Bt yielded 27.7 tons/acre while the BMR hybrid Mycogen F337 yielded 25.4 tons/acre (both @30% DM). This suggests that with good growing conditions, BMR has the genetic potential for high yields though not as high as non-BMR hybrids.

Initial *in vitro* analysis (pre-ensiled) was an incredible 69% NDF-d, compared to 48% NDF-d for the corn silage we're currently feeding. With 69% NDF-d, total dry matter digestibility must be at least 90%. Maybe I'm missing something (as has been suggested repeatedly by the less couth in this office), but does this mean—that if we increase digestibility just a bit more and go to an all corn silage ration our ration will be 100% digestible and our cows won't make any manure? (Some wits would say yes because they'd be dead.) And since ERNs say that one percentage point increase in NDF-d should increase milk production by half a pound per cow, a 21-point increase (69% vs. 48%) is 10 pounds of milk. But I'm just the Crops Dude, what do I know... ☺

--E.T.



## From the President's Desk - Milking Frequency Revisited

We recently switched from twice daily to 3x milking with our dairy herd. In the past the herd had been milked 3x, although that was discontinued a few years ago. But with the new barn and presumably improved cow comfort, the situation seemed appropriate to evaluate a move back to 3x. As you all know, increased milking frequency has been a "hot topic" these last few years. The latest wrinkle has been to test milking frequencies of 4x or more for a short period of time in early lactation for their effect on milk yield over the entire lactation. In fact, Tom Overton (Cornell University) and I have been talking about conducting a trial that evaluates the cow's behavioral, metabolic, and productive responses to increased milking frequency during early lactation. At some point we are actually going to need to do the experiment, although talking about it is fun too.

As I've mentioned our move back to 3x milking at various meetings, there appears to be some degree of confusion as to what the published research actually shows regarding cow response to increased milking frequency. Some concerns voiced include added demands on cow metabolism, negative effects on longevity, or poorer reproductive performance. In making the decision to move from 2x to 3x we reviewed the published data and here is what we know today about 2x versus 3x milking:

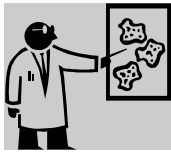
- Illinois researchers concluded that three times daily milking results in greater milk yield due to greater numbers of mammary epithelial cells (milk secreting cells) and likely greater metabolic activity of these cells. So, there are more cells producing more milk components. In 1995, Maryland researchers comprehensively reviewed cow responses to 3x milking and found that switching to 3x from 2x increases milk yield by approximately 7.7 lb/cow daily. This response of approximately 8 lb/cow is not affected by parity (age of cow) or previous milk production level of the herd. Overall production of milk fat and protein also increase, obviously reflecting the increased milk volume. Research evaluating milk quality has generally shown either no change in somatic cell count (SCC) and mastitis, or a reduction in SCC. In practice, increased milking frequency evacuates the udder more often, there-

fore, milk and bacteria are removed more frequently. However, if a dairy has poor milking practices, then a move to greater milking frequency might actually increase the incidence of mastitis.

- Measured effects of 2x versus 3x on feed intake have been inconsistent. Sometimes feed intake is unaffected, and other times feed intake increases, but not to the extent of milk yield. Consequently, cows may lose more body weight with 3x milking if the feeding program is not well managed. In fact, the feeding program is perhaps the largest management challenge when moving to 3x. The feeding program must enable cows to regain any lost body weight or condition before the end of the lactation.
- Arizona researchers reviewed the effects of 2x versus 3x milking on reproductive performance. Generally, there was no consistent effect on reproduction. They concluded that any reduction in reproductive efficiency, if it existed, was small and not significant in the reported scientific literature. Additionally, a California study found that herds with 3x milking actually had lower culling rates than cows on 2x milking.
- What about cow behavior? A study in Sweden published in 2001 found that cows milked twice daily stood longer (~1 hour/d more) than cows milked 3x during the four hours before the morning milking. The 3x cows could also rise from the stall more easily than 2x cows. Cows milked 3x daily had more resting bouts longer than 90 minutes in duration compared with 2x cows. They concluded that increased milking frequency improved lying times by reducing pressure in the udder shortly before milking resulting in greater cow comfort for 3x versus 2x milking frequencies.

The data clearly demonstrates the potential benefits of increased milking frequency. Of course, there are other major considerations when deciding whether or not to milk cows more often such as labor cost and supply, adequacy of the milking facilities, and importantly, level of herd management. For example, if greater milking frequency results in excessive body condition loss for a dairy herd, then the increased milk yield may well be unsustainable and ultimately unprofitable.

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## NEWS FROM THE FORAGE LAB

The Cornell Nutrition Conference was held last week, October 19-21, in Syracuse. It is always a fun meeting and having the opportunity to speak with industry representatives along with researchers is a plus too. There was a fair amount of banter concerning baseball regarding whose daddy to whom, but there was also some really good science.

I would like to share the presentation of Larry Chase and Bill Stone entitled "What's in the NPN fraction of forages?" One of the little black boxes of dairy nutrition is what makes up soluble protein. Some ration balancing programs require input values for soluble protein levels in the feeds and then predict levels in the rations. The nutritional gurus then decide what level is optimal for production. It used to be that a level of 30% soluble protein in

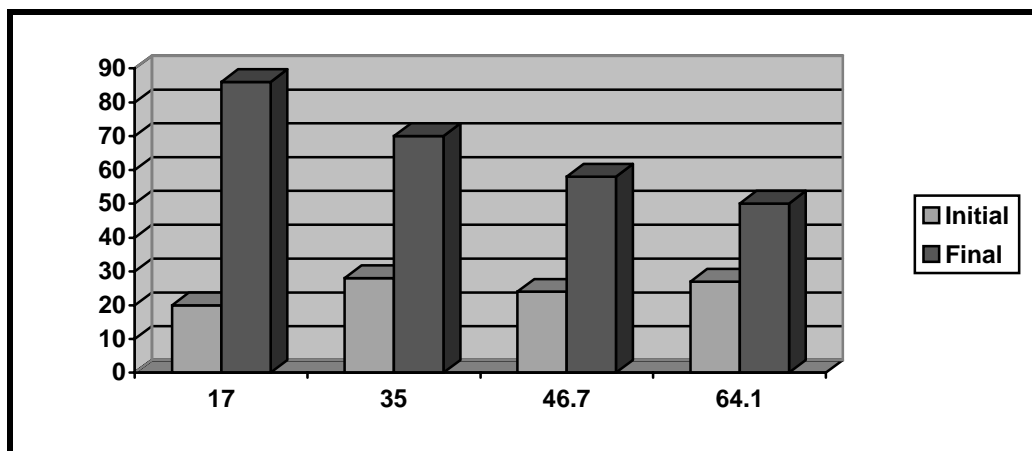
the ration was standard. Then that optimal level started to creep up and now seems that many rations will balance out at around 32-34% soluble protein. Of course, that optimal level would vary depending on diet, forage sources, and corn silage versus haylage. The theory being that soluble protein levels need to be adequate for microbial growth and maximal yields.

Soluble protein is made up of many different "protein" or rather, nitrogen (N) sources. There are true amino acid sources of N in the form of peptides and free amino acids along with the non-protein nitrogen sources that include ammonia, amides, amines, ureides, nucleotides and nitrates. Nutritionally, in general, the peptides and amino acids are good. Where as the NPN compounds may or may not be beneficial depending on the quantity consumed by the cow and in some cases may be detrimental to intake. Having analyses of what proportion of soluble protein is NPN versus true amino acid based protein would be helpful in

ration balancing and possibly indicate problems of intake.

The level of soluble protein and proportion of NPN to true protein in the soluble protein fraction is greatly influenced by the DM of the forage. Wet forages allow for more extensive proteolysis, or break down of true protein into smaller peptides, amino acids and the various NPN compounds. The best known example is wet alfalfa silage that undergoes clostridial fermentation. The stench is from proteolysis resulting in amines such as histamine, cadaverine and putrescine. These amines smell like what they are named. As percent DM increases, the level of NPN as a percent of the total N in the sample decreases, as noted in Figure 1 (Muck, 1987 as cited by Chase and Stone). The initial percentage of NPN in freshly cut forage is between 20-30% of the total N across dry matters. In the final fermented forage NPN levels were lower as the forage DM increased, indicating the higher proteolytic activity in wet forages when harvested.

Figure 1. NPN as a % of total-N in 1<sup>st</sup> cutting alfalfa at varying DM content (Muck 1987. ASAE, 30:7)



Chase also referenced work he had done in 1976 showing how the level of true protein (TP) and NPN vary between fresh forage and across DM of preservation (Table 1).

Table 1. Nitrogen constituents in alfalfa<sup>a</sup>

Constituent	Fresh Frozen	Direct cut silage	Haylage (45-50%DM)	Dry Hay
Total N, % of DM	3.38	3.48	3.39	3.36
TP, % of total N	80.5	41.1	50.7	85.1
NPN, % of total N	19.5	58.9	49.3	14.9
Ammonia-N, % of total N	2.37	15.8	11.8	3.27
Ammonia-N, % of NPN	12.1	26.7	25.5	22.0

<sup>a</sup>Chase, et al. 1976. JDS59:170.

The nutritional implications of the levels of TP and NPN and the various compounds that make up NPN are not yet fully understood, though minimizing proteolysis during fermentation is an unspoken goal. The CPM 3.0 ration balancing program allows for inputs of NPN as a percentage of the soluble protein. Within CPM 3.0 the predicted milk production will vary by soluble protein percent and NPN% of the soluble protein. Using CPM 3.0, Dr. Chase varied the levels of soluble protein in the forage portion of a diet between 40 – 70% of the forage CP which resulted in a range of predicted milk production of 105.7 lbs to 93.2 lbs; the higher production with the

40% soluble CP level. Then, holding soluble protein level constant and varying the NPN% of the soluble CP from 50-100%, predicted milk production decreased about 1.5-2.0 lbs as NPN percentage increased.

Currently, commercial labs do not offer true protein (TP) analyses of forage samples. In our lab we are working to establish this methodology along with other procedures to more clearly quantify the various protein fractions in feeds and their rates of degradation.

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### KEYS TO HIGH MILK PRODUCTION

University of Wisconsin dairy scientists studied six dairy farms with herd averages of at least 30,000 lbs. Here's what they found:

- All fed TMRs that were within a few percentage points of a 50:50 forage: grain ratio. However, corn silage varied from 41% to 68% of total forage in the TMR.
- All used a bacterial inoculant on their alfalfa silage, and four used one for corn silage.
- All used silage processors on corn silage.
- All cut alfalfa four times a year.
- Silage storage varied widely, including bags, bunkers, and uprights.

### KEEPING COWS HEALTHY

Bill Stone, a veterinarian working for Cornell's Pro Dairy program, will be at Rovers' Farm in Chazy on **Thursday, Dec. 9<sup>th</sup>** from 12:00 to 3:00. There's no charge for the meeting and lunch will be served. **This meeting is not only for free stall operations.**

Topics:

- Assessing herd health, how to recognize problems and what to do about them.
- How to recognize a sick cow. Not so much how to treat ketosis but how to recognize its symptoms
- Setting up procedures to check cows, basic physical exams, then what will you do with the info from the exam and how to record it

## What's Happening on the Farm



Was it the wild geese? Was it a visitor who has poultry at home? We are still uncertain of how, but we found a calf with salmonella. Of course this happened just a few days after a Cornell study on salmonella-free farms versus salmonella-infected farms started. Upon the recommendations of our vet, Dr. Kent Henderson, we immediately culled the unfortunate calf. Biosecurity up at the hutches was quickly revisited, but nothing deviating from the protocol was noticed. Trying to get the public to stay away from little animals is almost impossible – this despite a multitude of signage giving dire warnings.

Talking about herd health and diseases: We have taken to ear-notching the calves from the cows and heifers we have recently purchased. In this way we are able to check to see if any of the calves are carriers of BVD-PI. We are also checking for mycoplasma. Opening up the herd was not a decision taken lightly. What with Johne's, Bovine Leukosis, and a host of other threats to the resident animals it is highly advisable that anyone planning on introducing new livestock first take the necessary fecal and blood samples for disease analysis. If you decide to go ahead and buy positive animals it is imperative that you work closely with

your vet to revise your health protocols 'on-farm'.

The tall fescue in our pastures is really coming into its own now. Most of the clover has slowed down considerably, allowing the somewhat shy fescue to rally in this cooler weather. We have taken samples of the green pasture in late-October and await the results of that analysis. The pre-breed heifers out on these pastures continue to grow and look healthy, and well-fed. We do supplement them with good-quality hay *ad lib*. It seems possible that the fescue, clover, rye and timothy pasture sown earlier this year will return enough growth to allow us one more pass through the rotation. Then it's back into the heifer freestall barn and breeding. The larger animals are already back indoors, but the steers will remain outdoors as they did last year; dining on lactating cow refusal and hay.

We did contemplate taking a 4<sup>th</sup> cut of legume/grass, but after calculating the space demand for this, and the fact that we already are overwhelmed with silage bags, it was decided to leave it out there even though this is sure to increase fiber readings a bit in next year's 1<sup>st</sup> cut. The 1<sup>st</sup> cut haylage returned a disturbing 48% dry-matter a few weeks back giving us all a real start, and rushing the feeder off to add water to his TMR mix. It's eased back to 36% now, the water is no longer added, refusals plummeted, and

the milking cows are giving us 79.3 lbs per animal (as of Oct. 25).

Together with the vet we have been looking carefully at certain animals which are not responding to repeated breedings, are many days "out" in milk, are exceptionally low in production, or may be chronic mastitis sufferers. Being in a purchasing mode, it would appear to make sense to get rid of problem animals and then use that income to buy heifers with potential, or even a few cows that are younger, with good records. While milk prices may be coming down, and the soon-to-be-increased supply of rBST will no doubt add to milk supply, right now it still benefits us to buy animals.

The Crops Crew is busy spreading manure on harvested fields. Decisions are being made by Ev as to what, where and why of next year's plantings, and the hardwood trees are dropping leaves so fast one would think they were in a desperate hurry to be rid of their summer mantles. Staff are turning up in heavy jackets in the mornings now, and one or two of us have even taken to wearing gloves until noon. We all know what's coming, and for that very reason the last days of warm sunshine are being relished by all and sundry.

**Marco Turco**  
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## DESK-CLEANING TIME AGAIN



Ev's desk has once again become cluttered with an assortment of notes and trivia, some having little to do with farming but just too good to toss, so it's time to do some fall cleaning:

- ❖ Just because it's short and simple doesn't mean it's easy. Lincoln's Gettysburg Address had only 10 sentences. Of the 271 words, 202 had only one syllable. But it went through five drafts and took two weeks for Lincoln to complete.
- ❖ With the increased proclivity of milk marketing coops to sell farm inputs, it's just a matter of time before one of them goes into cahoots with a feed company. Then the coop can buy our milk, deduct purchases of seed, fertilizer, chemicals and feed, and instead of mailing us a milk check can simply send us a bill for what we owe.
- ❖ We heard that Charlie Sniffen is trying a new remedy for baldness which is made from alum and persimmon juice. The concoction doesn't grow hair but shrinks your head to fit what hair you have. So if Charlie's "fringes" appear to be a bit closer together...
- ❖ In confirmation that loopiness has no limits, the California legislature recently approved a partial ban on hand weeding. The objective is to reduce back injuries by field workers. However, there's an exemption for organic crops. What? Workers in organic crops are immune to back trouble?
- ❖ According to a British report, unless you're between the ages of 35 and 40 prospective employers see you as either too young or too old. At my age I take solace in the fact that wrinkles don't hurt.
- ❖ Someone said that to be happy with a man you must understand him a lot and love him a little, while to be happy with a woman you must love her a lot and not try to understand her at all. I know I'll never understand how a woman can take boiling hot wax, pour it onto what must be a very sensitive part of her body, rip the hair out by the roots and still be afraid of a spider.

## AND THEY SAID I WAS CRAZY...

We have some muck cropland, and one of these muck fields, a worn-out trefoil-timothy seeding done by Cornell back in the 1970s, grows great quackgrass. Both yield and quality of the stuff are impressive. However, over the years the field had been rutted up and while we wanted to renovate it, we didn't want to kill the quackgrass. So in 1993 we disked and cultipacked the field and for insurance seeded 2 lbs/acre of timothy. A number of less enlightened individuals—most notably Brother Sniffen—got a chuckle out of Thomas and his precious quackgrass. The timothy caught but soon was overrun by the quackgrass, which is doing just fine, thank you.

Now the first commercial quackgrass variety has been released. It's intended for use in soil conservation, but University of Minnesota agronomists did some research comparing quackgrass to orchardgrass and reed canarygrass, both in pure stands and in mixtures with alfalfa. They found that the yield of quackgrass-alfalfa was similar to or exceeded the yields of reed canarygrass-alfalfa and orchardgrass-alfalfa. Forage quality was similar to reed canarygrass and higher than that of orchardgrass. The best part is the name of the new variety: *Everett*. The researcher's concluding statement: "Quackgrass is a valuable forage crop and the availability of Everett quackgrass seed will allow promotion of its use for soil conservation and forage." Oh, ye of little faith.

--E.T.

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## CALENDAR DATES



### **DAIRY DAY AT MINER INSTITUTE**

Wednesday, December 1, 2004

Commercial Exhibits open at 10:00 am with program running from 11:00 am - 3:00 pm.

Speakers for Dairy Day will include:

Dr. Brian Perkins, Technical Services Specialist, Monsanto Dairy Business

“A look into the crystal ball for the next five years.”

Dr. Rick Grant, President, Miner Institute

“Putting forage digestibility to work for you.”

Katie Ballard, Director of Research, Miner Institute

“Reproductive management: Who changed the protocol and why?”

Ev Thomas, Vice President of Agricultural Programs, Miner Institute,

“The Crops Dude looks at forage analyses.”

Contact Wanda Emerich at 518-846-7121 x117 or [emerich@whminer.com](mailto:emerich@whminer.com) for further information.

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### **DAIRY CALVES AND HEIFERS: INTEGRATING BIOLOGY AND MANAGEMENT**

January 25-27, 2005

Holiday Inn-Liverpool

Syracuse, New York

A conference for dairy producers and their advisors. This conference will focus on how to manage replacement programs for improved farm profitability. With an understanding of the biology of growth, disease, and environmental stress, producers can manage nutrition and health programs to reduce sickness, mortality, and the age at first calving. The conference will feature over 30 speakers from across the United States and Canada who will share their knowledge and answer your questions about growth, economics, nutrition, health, and housing. Speakers will include animal scientists, veterinarians, economists, engineers, producers, educators, and farm advisors. Attendees will learn how to manage nutrition and health programs to achieve growth rates consistent with a farm's management style, resources, and goals.

For more information about registering for the conference go to this web page

[WWW.NRAES.ORG/CONFERENCES/CALVESREGIS.HTML](http://WWW.NRAES.ORG/CONFERENCES/CALVESREGIS.HTML)

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### **VERMONT LARGE FARM DAIRY CONFERENCE**

#### **AT THE NEW ENGLAND BEEF AND DAIRY EXPO**

Champlain Valley Expo, Essex Junction, VT, March 1, 2005 (trade show March 1 and 2).

Instead of the traditional February meeting at the Sheraton, the Large Farm Conference has teamed up with the finest cattle trade show in New England.



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### **CORN CONGRESS AT MINER INSTITUTE**

Thursday, March 3, 2005

Commercial Exhibits open at 10:00 am with program running from 11:00 am - 3:00 pm.

## FALL SOIL SAMPLING

Fall is prime time for soil sampling. CAFO farms are required to sample each crop field at least once every three years, but farmers should be doing this anyway. More frequent soil analysis is recommended where very high crop yields are removed or where heavy manure applications have been made. This is common sense—where nutrient additions or removals have been unusually high soil sample more often.

I much prefer sending soil samples to university labs since most of these labs base fertilizer recommendations on actual crop response research: Use several rates of fertilizer on a crop, and see which results in *maximum economic yield*. Do this on many soil types over many years—as has Cornell University—and you have the basis for a sound nutrient recommendation program. Having been involved in one of these field trials back in the late 1960s (P and K needs of corn), I have considerable respect for their reliability. Of course, this doesn't mean that university recommendations are perfect—I've long said (and not without reason) that Cornell's potassium recommendations for alfalfa are too low, an opinion shared by many in the agribusiness community including a number of fertilizer dealers (duh). But on the really important stuff—lime, N and P requirements for just about all field and forage crops—Cornell and most other university labs are reasonably close to what people “in the field” are recommending. The key, however, is to start with a recent soil analysis—test, don't guess.

--E.T.

### A GOOD SEASON FOR MYCOTOXINS?

Lots of corn got planted late this year, and the first killing frost around the end of September throughout much of this region put an end to the growing season. Judging from the amount of frosted corn harvested for silage in October, we're setting ourselves up for a banner year for mycotoxins. There's no guarantee this will happen—and we hope it doesn't—but the ingredients are in place: Start with corn killed before the ear is fully dented, when there's still lots of sugar in the kernels. Add some warm, sunny days following frost to heat up the ear within its tight husk and really get those mold spores growing. The result—mold (highly likely) and *perhaps* mycotoxins. Serious mold problems in immature corn can occur within a week after a killing frost.

Watch for visible mold in your corn silage, or health problems in cattle eating the silage. Have your crop tested for mycotoxins if you suspect a problem. Commercial binding agents are available that will to some extent correct the problem (in the animal, not the silage).

### ELECTION DAY QUOTES

- No man's life, liberty, or property are safe while the legislature is in session.  
--Mark Twain
- The difference between golf and government is that in golf you can't improve your lie. *George Deukmejian*
- The government is like a baby's alimentary canal, with a happy appetite at one end and no responsibility at the other.  
-- Ronald Reagan
- A government which robs Peter to pay Paul can always depend on the support of Paul.  
--George Bernard Shaw
- Looking at certain members of Congress, the only reason their constituents keep re-electing them is to keep them from moving back home. There's simply no other explanation for it. *Doug Robarchek*, columnist for *The Charlotte Observer*

## OUT THERE....

David Pimentel, an expert on food and energy at **Cornell University**, has estimated that if the entire world were the way the United States eats, humanity would exhaust all known global fossil-fuel reserves in just over seven years. Every single calorie we eat is backed by at least a calorie of oil, more like ten. In 1940 the average farm in the USA produced 2.3 calories of food energy for every calorie of fossil fuel energy it used. By 1974, that ratio was 1:1. In the 1940s we got about 100 barrels of oil back for every barrel of oil we spent getting it. Today each barrel invested in the process returns only ten.

*(Richard Manning, October 2004)*



Vermont Dairy farmers who participated in the **University of Vermont** Grazier Support Network provided production data used in a study comparing the economics of pasture-based dairying to confinement dairying in Vermont. The pasture-based dairy farmers earned an average of \$600 net cash income per cow over 2 years. In contrast, 24 dairy farmers, comprising the top 25% in per-cow profitability of farms using Agrifax accounting, only earned an average of \$451 net cash income per cow.

*(Bill Murphy, University of Vermont)*



According to Ron Macher, the five biggest risks in agriculture are price, weather, bug pests, weed pests, and government. These all relate to production risk (areas of risk are production, marketing, financial, legal, and human resources). If more of your income comes from marketing and less from production, then you are more in control of your price and you have removed most of the big risks of farming.

*(Ron Macher, Sept/Oct 2004)*



The **Grasslands Reserve Program**, administered by the USDA's Natural Resources Conservation Service (NRCS) and Farm Service Agency (FSA) and which is now accepting applications, seeks to provide biodiversity of plant and animal populations and improve environmental quality through permanent or 30 year easements, or 10, 15, 20, or 30 year rental agreements. Restoration practices include wildlife, grazing, and agronomic practices, some of which can be cost shared up to 60%. To be eligible the land must be privately owned and include at least 10 acres of contiguous, eligible land.

*(The Solar Dollar, Winter 2004)*



While a **Johne's Disease** vaccine is available, it is not recommended for routine use in most herds. Use of the vaccine requires permission from the state veterinarian since it can interfere with TB testing results. Vaccinations can reduce the number of cows shedding the Johne's microbe, but spread of the infection continues. In other words, vaccinations will not eliminate the disease. As well, use of the vaccine interferes with testing for Johne's. Therefore, the vaccine can impede rather than help Johne's disease management in many herds.

*(NCBA, 2004)*



### CLOSING COMMENT

**Better to understand a little than to misunderstand a lot.**

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