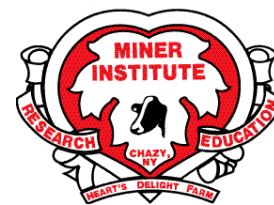


William H. Miner Agricultural Research Institute FARM REPORT



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June 2004



WHAT'S HAPPENING ON THE FARM

The rains came: a monsoon-like deluge of warm, pregnant drops that turned the forests of the North Country into a kaleidoscope of washed colours, and lifted our failing winter spirits. We moved the cows into the new dairy barn then ...

It was an exciting, exasperating, and humorous learning experience for both the cows and the staff. The animals, it seemed, took to the new dairy barn and freestalls with a gusto that was alarmingly bacchanalian. Within minutes of being moved into the new, larger, airy freestall facility they were laying comfortably on their extra-long, extra-wide foam beds, ruminating thoughtfully at these highly improved living conditions. Headlocks, usually a problem to animals inexperienced to their shape and somewhat restrictive space, were nonchalantly dealt with. The automatic scraper proved a source of interest for a while, as did the air-filled curtains. Sending cows through the new parallel parlor (we previously used a herringbone parlor) offered us moments of hilarity and occasional frustration requiring self-discipline, but all in all it went well, the actual milking taking 3 hours (145 cows) on the first milking. Our times have improved dramatically each day, and milk letdown has not been a concern. If the behavior of the animals in the new freestalls is any indication, the expected high-culling rate associated with a move to a new facility won't happen in Miner Institute's case.

Despite many of our croplands being tile-drained, the mini-flood we've had has left puddles and ponds everywhere. Right now, we are unable to complete 1st cut—though we did manage to get some of it in ahead of the wet weather. The corn stems have popped their little green necks out of the soil, and our recently planted pastures are starting to look like a smooth carpet in the distance. Equipment remains primed and ready, the Crops Crew restless in their present inertia.

The first of the summer-grazing animals have been turned out now, eating their way across dense swards of reed canary and orchard grass that is strip-fenced for the

(Continued on page 2)



**ROBERT F. LUCEY,
1926-2004**

Robert F. Lucey, retired professor in Cornell University's Department of Soil and Crop Science, passed away at his home in Ithaca on May 7th. In 1961 the New York Legislature appropriated funds to begin an applied research and demonstration program in Northern New York. Soon after that, Bob made the first of many trips to the region, establishing regional bases of operation at SUNY Canton and at Miner Institute. The small demonstration area established at the Institute in 1961 soon grew to 40 acres of research plots evaluating the latest varieties and crop management technology. Over forty years later, the Northern New York Agricultural Development Program continues to fund agricultural research activities throughout the region. An active member of Miner Institute, Bob leaves eight children, 11 grandchildren, and countless friends.

HEART'S DELIGHT FARM HERITAGE EXHIBIT NOW OPEN

The Heart's Delight exhibit, located in the Miner Institute farm complex, is open for the summer. Hours are 9 AM to 3 PM weekdays and, during June and July, the same time on Saturdays, too. This is a wonderful exhibit of life on William Miner's Heart's Delight Farm in the early 1900s, complete with videos. If you haven't seen it yet, take an hour—it's hard to do it in less—and stop by. The exhibit is handicapped accessible.

(Continued from page 1)

most efficient use of the spring growth. They've all had their rabies vaccines and a pour-on dip for external parasites, with a mineral block with additives that prevents internal parasites. Black flies, house and horse flies, and mosquitoes make for poor symbiotic components with grazing animals—we worry about pink eye, for example. This year we will be trying fly predators in our efforts to control the biting insect plaque that seems synonymous with warm, wet weather in the Northeast. When the first load of 50,000 pupae arrived Shawn Eichler, our Pasture and Grazing Supervisor, was skeptical, but went ahead and spread them around calf hutches, old compost sites, and the greenhouse. We noticed that directly around the dump location the fly problem did indeed seem well managed, but step away for about 50 yards and they were as aggressive as ever. So, around the new dairy barn and heifer/dry cow buildings we continue to use a chemical spray applied every week.

The calf hutches tend to get a little muddy during spring rains, so rather than the more regular cleaning we simply apply a layer of straw to the hutch, creating a bedded pack for the calf until the weather provides us sunshine and we can clean out the hutch and start with a light dusting of sand and lime to the floor.

The Summer Experience in Farm Management students arrived on the day we moved cows into the new dairy barn. The usual routine of work was non-existent, and they gladly joined us in our 15-16 hour-long days as we trained the animals, repaired breakdowns, and ironed-out the kinks *de rigueur* in a brand-new dairy facility. What an amazing time to be at the William H. Miner Agricultural Research Institute!

Marco Turco
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ALFALFA WINTERKILL: WHAT NOW?

Some farmers checked their alfalfa fields early and discovered that they had considerable winterkill, while others remained blissfully ignorant of the situation. Now that first cut has started, these farmers are no longer ignorant of the situation, nor are they particularly blissful. Winterkill was often worst on the knolls and high places in the field—in other words, where the alfalfa normally does best and therefore where there's less grass. The result is that many once-lush knolls are now as barren as Charlie Sniffen's noggin. Other fields have nothing left except for some sparse growth on the fringes, which perhaps is a more accurate description of the Sniffen dome.

What now? Many of these fields should be plowed, but when and what to plant then? As was mentioned in last month's *Farm Report*, alfalfa autotoxicity is a real threat for winterkilled stands and is why you shouldn't be in a rush to seed alfalfa back into stands established in spring 2003 or earlier. Plowing after first cut and seeding to alfalfa in late July is tempting, but research results have been inconsistent. Ontario researchers found that the toxins from alfalfa plowed in the fall lasted long enough to affect alfalfa seeded the following spring. *Au contraire*, Michigan State research concluded that delaying alfalfa seeding for three weeks after the old alfalfa was killed (with an herbicide) resulted in successful establishment. Does the Michigan State research simulate winterkill conditions? I don't know, but in most cases wouldn't recommend reseeding alfalfa into winterkilled stands anytime this year. Notill seeding directly into winterkilled alfalfa is even a worse idea: When Purdue University agronomists seeded 4 to 11 lbs/acre of alfalfa into winter-damaged stands, less than 10% of the seed survived to produce new plants. Part of the problem is that the "zone of toxicity" around each dead alfalfa plant is so large—up to 16".

Alfalfa autotoxicity only affects alfalfa, so you can seed another legume species. If you're going to make a summer seeding, use 6 to 8 lbs/acre of red clover with a forage grass. Timothy at 4 to 6 lbs/acre would be my first choice based on price and ease of establishment, with tall fescue another possibility though we don't have much local experience with this species. While I like reed canarygrass, red clover stands normally last only two years (maybe a decent first cut the third year), and the price of canarygrass combined with its slow start makes it a poor choice for short-term stands. (Orchardgrass? See my article in this newsletter.) Seeding legumes in late July is better than in August because this gives the seedlings time to become better established. If they become really well established, avoid the temptation to take a fall harvest this year!

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DAIRY COW FACTS AND FIGURES

Dairy cows per farm	% of U.S. dairy cows
Under 30	2.4
30-49	7.4
50-99	19.6
100-199	16.4
200-499	15.9
500+	38.3

Easier to remember: About 30% of the nation's dairy cows are on farms with under 100 cows, 30% on farms with 100 to 500 cows, and 40% on farms with over 500 cows.



FROM THE PRESIDENT'S DESK— MAKING THE MOST OF FIBER DIGESTIBILITY

It's time for first cutting, perhaps getting past time, and as I look out my office window it is raining. In fact, it typically rains early and often during May in the Northeast. During my 13 years in Nebraska, May was also a rainy month. So, dairy producers throughout much of the U.S. must contend with the challenge of achieving timely harvest of first-cutting forage during a time when it often rains several times weekly. As a nutritionist, I begin to feel ill as I see days slip by and the forage becoming more mature and less digestible—I swear I can hear the sound of lignin being slapped down against otherwise digestible plant carbohydrates if I listen carefully enough through my open office window.

But, I am nothing if not an eternal optimist, so I am going to assume that we will be able to harvest high-quality forage in sufficient amounts to meet our needs (and if we don't, then I can conveniently blame Ev for any production problems we may encounter this next feeding cycle). This month, I'd like to focus on some diet and herd management strategies that will allow us to take advantage of the highly digestible forages we harvest or purchase for our lactating cows.

We all are aware of the benefits of digestible NDF: Greater feed intake, higher rumen pH and better fiber fermentation, no lactic acid, greater bacterial protein production, and importantly, a more constant supply of absorbed nutrients from the digestive tract which translates into more milk production. The relationship between NDF digestibility and performance has been reasonably well established. For every one percentage-unit increase in NDF digestibility, there should be a 0.40 pound increase in dry matter intake and a 0.55 pound increase in 4% fat-corrected milk yield. Just this year, Washington State researchers found that, with high-producing cows, each one percentage-unit increase in dry matter digestibility was associated with a 1.4 pound increase in milk production. At the Institute from 2000 to 2004, our haycrop silage has averaged 43% NDF digestibility (measured in vitro at 30 hours of incubation) with a range from 37.1 to 52.5%. Think about the range in milk yield that represents—approximately 8.5 pounds of milk!

How to ensure a maximum response to higher NDF digestibility forages on the farm? We need to focus on a list of factors: Harvest management; silage fermentation; palatability; ration formulation (sometimes focused on to the exclusion of other factors), TMR mixing, consistency, and delivery; feeding strategy and systems; and cow comfort, environment, and overcrowding issues.

One important factor is how cows of differing production levels respond to high NDF digestibility. Research reported this year from Nebraska evaluated the response to forage

NDF digestibility that ranged from 58 to 67% (48-hour NDF digestion in vitro). On average, cows fed the diet containing the lower (or more average) NDF digestibility forage produced 76.3 pounds of milk/day while the cows fed the higher digestibility forage produced 78.3 pounds daily. Not a huge response. But, when the response of each cow was examined, there was a “break point” where cows producing greater than about 55 pounds/day responded to higher digestibility, but lower producing cows did not. In fact, if we compared a 60-pound cow versus an 80-pound cow, there was an additional 6 pound/day response in milk to greater NDF digestibility by the higher producing cows! This means that we must devise a way on every farm to allocate high-NDF digestibility forages to the highest producing cows or else we run the risk of diluting the benefit (and greater cost) of high-quality forage. What a waste of resources if we beat the weather, harvest in a timely manner, and then squander the high-quality end product by poor feeding and cow grouping management.

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BIOTECHNOLOGY NEWS

It was a bad month for those opposed to genetically modified crops:

- ✓ A Canadian court ruled in favor of Monsanto in its lawsuit against a farmer who grew Roundup Ready canola from saved seed but claimed that the Roundup-resistant trait came from pollen that blew onto his farm from the neighbors. Monsanto, apparently considering this explanation similar to “The dog ate my homework,” didn't agree, sued, and won. Without going into any of the gory details about the penalties, suffice it to say: You would not want to be this farmer.
- ✓ The United Nations' Food and Agriculture Organization (FAO) has endorsed GM crops, stating that they help small farmers, have some environmental benefits, and have no proven adverse effects on human health.
- ✓ After a six-year moratorium, the European Union Commission approved an application by Syngenta to sell GM corn hybrids to be used for food consumption. All food produced from GM crops will be labeled, though.

VET CORNER

Recently a group of heifers was blood-tested prior to purchase by Miner Institute. One of the screen blood tests is for Neospora caninum; one of the heifers tested positive and was refused for purchase. Thus, the blood test protected the herd from introduction of one of the most commonly diagnosed causes of abortion.

For the past 10 years, Neospora caninum has been recognized as an increasing cause of bovine abortions in the Northeast. Definitive diagnosis is based on identifying parasites in the brain stem and heart muscle of the aborted fetus. Interpretation of blood work on abortion cases is tricky at best; just because an aborting cow has a positive Neospora titer does not mean that Neospora was the cause of the abortion. The positive titer could be the result of natural exposure or vaccination and not the actual cause of abortion. *So why was the positive heifer rejected?*

Cows and heifers abort between three and eight months due to Neospora. A multiple abortion storm or sporadic abortions can occur. Intervet, the maker of Neospora vaccine, has data to prove that early embryonic death and infertility can be linked to Neospora infection. Cows can remain infected for life, but not ALL infected animals will abort. Natural immunity seems short-lived. The major mode of transmission is between cow and fetus. *If a calf is born to a cow that tests positive, the heifer calf can be congenitally infected and can also abort when she reaches breeding age. This is the main reason that the positive heifer was rejected by Miner Institute.*

The dog and coyote are definitive hosts, which means the oocysts of Neospora can be passed in their feces. So it is important to prevent the cows from being exposed to feces from other animals by covering stored feeds, removing manure from mixing areas and bunkers, and not allowing cattle to eat contaminated feed. Infected fetuses, cleanings, and dead calves can also be a source of contamination so it is best to properly dispose of these tissues and not allow dogs, cats, or cattle to eat them. Since there is no treatment for Neospora, good management and vaccination are the best course of prevention. The vaccine can be given pre-breeding or during the first trimester of pregnancy followed by a booster 3-6 weeks later. Cows need to be re-vaccinated with each gestation.

Kent E. Henderson, DVM
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One of the cows in our new dairy barn taking advantage of brushes installed for cow comfort and self grooming.

SUMMER STUDENTS ARRIVE AT MINER INSTITUTE

In late May we welcomed nine students from eight universities for the Summer Experience in Farm Management and Summer Experience in Equine Management. We've offered these internship programs since 1982. The students work on the farm with our employees in the dairy operation milking, feeding, in herd health, with calves, and in field crops. In the equine program students participate in breeding management, mare and stallion management, training, and barn management.

In addition to working on the farm, students will be participating in workshops and seminars on a variety of topics involving agronomy, nutrition, breeding, and behavior. Students also work on independent research projects that are summarized in a paper and presented in an oral report.

The crew for 2004 is:

Abigail Carney, Iowa State University
Alison Denno, University of Vermont
Holly Hagaman, University of Arizona
Jennifer Hagen, University of Georgia
Christina Hurley, Virginia Tech
Montarie Lanier, North Carolina State University
Amy Parish, University of Delaware
Emily Smith, University of Massachusetts
Ashley Wolfe, Virginia Tech



FORAGE LAB NOTES: CORN SILAGE FIBER DIGESTION RATES

A recent flurry of emails regarding the fiber digestion rates currently in the CPM 3.0 feed dictionary warrants some explanation of how those values were determined. Since Charlie Sniffen and I were responsible for those values and now that “Charlie” has become “Fencrest,” I guess that leaves me holding the bag for an explanation. Some CPM 3.0 users have indicated that the rate (kd) of ruminal fiber degradation (fraction B3 of the carbohydrates) is too high in the feed dictionary compared with 2003 corn silage analyses and actual cow production. The current kd values in the CPM 3.0 feed dictionary for corn silage were obtained using a very large dataset of 30-hour in vitro digestibility measures provided by Ralph Ward at CVAS. The analyses were primarily of corn silages from crop year 2000. We took those values and statistically analyzed them to determine the range of NDFd values and to identify any relationships with DM, lignin, ADF, NDF, etc. Surprisingly, there was little relationship between digestibility (NDFd) and any variable.

After sorting the dataset by NDFd value, we then ran the data through a calculator, which uses ADF, NDF, NDFd, and lignin to determine the rate at which the potentially digestible fiber (fraction B3) digests in the rumen. That equation was generated at Cornell University and was specific to grasses and legumes. At the time, there was no equation specific to corn silage. Corn being a grass with lots of grain, we did our best with what we had. Since then Cornell has developed an equation specific to corn silage, which we will be using with an up-to-date dataset of corn silage NDFd analyses to re-evaluate the fiber kd values in the dictionary. Suffice to say that in general, the new equation calculates fiber B3 degradation rates to be about 1.0-1.5% units lower than the values currently in the feed dictionary. Below is a table indicating the difference in predicted NDF rates of ruminal digestion using the 2 calculations. It is our suggestion to use this data with discretion, obtain good NDFd 30-hr digestion analyses and monitor animal performance against the ration output in CPM 3.0. We are most interested to hear feedback from users about this in order to validate the equations and improve the program. The digestion rate values listed in the table are for 40%, 50% and 60% NDFd at 30 hours across 3 levels of lignin content as percent of DM. The equations used to calculate the rate of digestion are listed as old vs. new.

Comparison of 45% NDF corn silage fiber digestion rates as calculated with the old and new equations. Rate values are percent of fiber digested/hour.

	Lignin as % of DM					
	2		3		4	
Kd rate calculator	old	new	old	new	old	new
40% NDFd	3.36	2.20	3.41	2.39	3.48	2.63
50% NDFd	4.35	3.04	4.45	3.35	4.56	3.74
60% NDFd	5.68	4.12	5.85	4.64	6.04	5.33

The differences in the predicted rates of fiber digestion are certainly due to differences in the two Cornell equations. Though not to rule out the possible effects of crop year/growing season and the other unknown variables that affect fiber digestion.

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SPRING PLANTING AT THE INSTITUTE

We seeded 14 acres to leafhopper-resistant alfalfa in April, and in early May we seeded 5 acres across from our new dairy barn to several pasture mixes, predominantly tall fescue. We started planting corn on April 30 and had about 180 acres in by May 13th, with only a few soggy acres left to plant. We bought a new chisel plow last fall that allowed us to chisel several inches deeper, with excellent results as we ripped up some old plow pans. Field conditions this spring, as reported by the Crops Crew, were the best in recent memory. This was most likely due in part to favorable spring weather, but we think deep chiseling had something to do with it, too. Since mid-May it's been rain, rain, rain, and first cut is being delayed (for yet another year).

Corn planted April 30th on chisel-plowed land was up in 10 days, while no-till corn planted May 10th emerged in 8 days. Plant populations are spot-on, with the first 8 fields planted averaging 32,200 plants per acre (range 31,600 to 33,100). Hybrid maturities are 85 to 100 days RM, with two-thirds of the hybrids 90-95 RM. Modern corn planters are great: We planted seed ranging from large rounds weighing over 50 lbs per 80,000 kernel unit to small flats weighing less than 40 lbs, with no difference in plant population. About one-third of our corn acreage is brown midrib (BMR), so we'll be giving this technology a good look in the coming year. We also established several corn field trials; more on these in a later Farm Report.

—E.T.



THE CROPS DUDE STILL HATES ORCHARDGRASS

About ten years ago an article for this newsletter was titled "I Hate Orchardgrass." A couple of farmers told me that they loved orchardgrass, and the reason others didn't like it was that they weren't managing it aggressively enough. So we tried some, finding that it headed earlier than alfalfa, and quality dropped like a rock. It was a most unpleasant forage crop. About five years ago, based on additional experience with the stuff, I wrote another article, "I Still Hate Orchardgrass." But plant breeders were developing later-maturing varieties of orchardgrass,

and (in occasional moments of weakness) I even suggested to some farmers that they try it on a limited acreage. It was with some trepidation that we used orchardgrass in an alfalfa-grass seeding a few years ago, at the very modest seeding rate of 1 lb/acre. (This was the rate recommended by the seed company; when the company selling the stuff tells you not to use much, you probably should listen.)

Events of the past winter remind me why I still hate orchardgrass. Experience is a wonderful thing; it lets you recognize a mistake when you make it again.



An alfalfa-orchardgrass field at Miner Institute. Where the alfalfa winterkilled, so did the orchardgrass.

Orchardgrass is more susceptible than other forage grasses to winter damage, especially ice sheeting. This past winter farmers in this area lost a lot of alfalfa, due most likely to several consecutive nights of -10 to -20°F temperatures combined with little snow cover. (Note the "most likely": With winterkill, only the foolhardy are certain of the cause.) Farmers also lost orchardgrass in some of these fields, and almost always it was the only grass they did lose. Nor were the losses of orchardgrass due exclusively to ice sheets, since it's not likely that ice sheets would perch



This orchardgrass (front and center in the photo) was heading out on May 18th while the alfalfa wasn't anywhere near the bud stage.

on knolls and gentle slopes. In our one alfalfa-orchardgrass field, where we lost the alfalfa to winterkill we also lost the orchardgrass. So go ahead and plant all the orchardgrass your heart desires... We won't be planting any.

This may well elicit a response from a few farmers or seedsmen, most likely not ones from this region, singing the praises of orchardgrass. My response will be that they weren't here in January, freezing their, uh, toes off as the wind blew a gale out of the North and daytime temperatures struggled to reach 0°F.

—E.T.

NOTABLE QUOTES FROM FAMOUS FOLKS

- ✓ When I was a child I could remember anything. Whether it happened or not. *Mark Twain*
- ✓ The secret of life is honesty and fairness. If you can fake that, you've got it made. *Groucho Marx*
- ✓ Even if you're on the right track, you'll get run over if you just sit there. *Will Rogers*
- ✓ It's gonna be like threading a needle with a haystack. *Yogi Berra*
- ✓ The definition of insanity is doing the same thing over and over and over and over again, but expecting a different result. *Albert Einstein*



OUT THERE

—M.T.

The **World Agricultural Forum's** 2004 Congress of the Americas was held in St Louis, MO on May 16-18. The Congress's theme "*Future of the Agri-Food System—Perspectives from the Americas*" had participants looking at agriculture in the Americas through the following lenses: Commodities, natural resource management, social issues, and trade. The Congress began by examining the current state of the agri-food system, then looked at where the system needed to be in the next 5, 10, 20 years and how to get there. Participants represented political, corporate, academic, and civil society leaders. The size of the Congress was intentionally kept small and attendees were at a very high level. There was a thorough interaction amongst the roundtable participants and the attendees. The outcome of the Congress was a set of action plans identified by the attendees and participants. The program has been placed on the Miner Institute website (www.whminer.com); anyone interested in a particular topic discussed may contact Marco for further details. Proceedings will soon be available.



According to recent research by Dr. Becky Whay of the Department of Clinical Veterinary Services at the **University of Bristol**, the four steps to successfully managing bovine lameness are:

- Early recognition of the condition
- Rapid effective treatment
- Sympathetic care
- Provision of analgesics (pain killers)

(Merial)



German researchers identified that an adequate minimum ventilation flow in summer and insulated roof-

ing are key factors in the provision of good welfare for dairy cows and acceptable ammonia emissions. (Landtechnik)



In **India** a study looking at changes that occurred in the rumen's bacterial population in clinical and sub-clinical ketosis found that the total bacterial count decreased in anorexia/sub clinical ketotic animals, but increased after intravenous administration of dextrose saline. The predominant change was a rise in the counts of acetogenic and butyrogenic bacteria, while the decrease occurred in the numbers of propiogenic bacteria. (IDT)



Recently, researchers tested trees genetically modified to remove ionic mercury from contaminated soil, and then convert that to volatile elemental mercury that is released into the atmosphere. The field tests were conducted in Danbury, CT, and supported by the **EPA**. Mercury caused poisoning in workers, who get the "Danbury Shakes." The fear is that

the mercury "remediation" project will simply move the pollution to the atmosphere, from which it will be redeposit over the cities of the Northeast and the lakes and waterways of the northern U.S. and Canada. Once deposited in waterways and streets, elemental mercury will be converted by microbes into organic mercury that will cause nerve damage and birth defects in humans and animals alike. (Joe Cummins)



The **Vermont Statehouse** experienced a "mock contamination emergency" recently. Activists from the group GE Free Vermont swarmed the capitol dressed in biohazard suits and tried to release 100 yellow, helium balloons symbolizing genetically engineered pollen. The action was meant to dramatize the importance of S.164, also known as the Farmer Protection Act, which would protect farmers from lawsuits caused by unintentional drift of patented GE organisms from one farm to another. The bill is now in the House Natural Resources and Energy Committee. (Ken Picard)

AGRIBUSINESS NOTES

- ✍ **Syngenta** is buying Advanta BV, which operates as **Garst Seed**. This will increase Syngenta's U.S. market share of corn and soybeans to 11 and 10% respectively.
- ✍ **Farmland Industries**, once the largest farmer-owned cooperative in the U.S., has emerged from Chapter 11 bankruptcy and plans to start repaying creditors later this month. Unsecured creditors are expected to receive between 60 and 82% of what's owed to them.
- ✍ The **New York Senate and Assembly** Environmental Conservation Committees have introduced legislation to create a *farm agrichemical and pesticide collection program*. NYDEC and the NY Department of Ag & Markets would jointly develop and operate the program. \$50 of each registration fee on pesticide businesses would fund the program. Good news for farmers and for the environment!

**ADVANCED DAIRY NUTRITION AND MANAGEMENT FOR AGRISERVICE PROFESSIONALS
CORNELL UNIVERSITY, ITHACA, NY
AUGUST 16 - 19, 2004**

Course Topics:

- Comprehensive transition cow management (biology, management, new concepts in dry period length, and frequent milking of fresh cows)
- Comprehensive replacement management (biology, management, application of target growth system for dairy heifers)
- Behavioral and facility considerations for cow comfort, overcrowding, and grouping management
- Immune function and ramifications for nutrient metabolism and performance
- Financial and herd performance benchmarking
- Fiber digestibility and relationships to cow performance
- Optimizing forage content of diets for lactating cows
- Application of laboratory-derived digestibility information in ration formulation
- Balancing for amino acids in the context of BSE
- Concepts in fat and fatty acid digestion
- Troubleshooting milk fat test on dairy farms
- Integrating forage and dairy production systems—optimizing whole-farm management
- Plus an optional Cornell Net Carbohydrate and Protein System/CPM Dairy Training Session (Thursday afternoon, August 19th)

Course Faculty:

Greg Albrecht, *Cornell University*
Dale Bauman, *Cornell University*
Larry Chase, *Cornell University*
Karl Czymmek, *Cornell University*
Heather Dann, *Miner Institute*
Curt Gooch, *Cornell University*
Rick Grant, *Miner Institute*

Tom Overton, *Cornell University*
Jim Perfield, II, *Cornell University*
Bill Stone, *Cornell University*
Mike Van Amburgh, *Cornell University*
Matt Waldron, *Cornell University*
Dan Weary, *University of British Columbia*

The \$450 registration fee includes all course materials, breaks, lunches, and dinner on Monday and Wednesday evenings. (We recognize that networking is an important part of these courses, so evening functions have been planned for Monday and Wednesday evenings).

Registration is available at: <http://www.ansci.cornell.edu/dm/advanced/adnreg.html>

**Space is limited and registrations will be accepted
until course capacity is reached.**

For questions on the course content contact:

Dr. Tom Overton
Cornell University
Phone: (607)255-2878
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For questions about registration contact:

Robin Huizinga
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RESEARCH SUMMARIES

- Soil fertilization practices can influence herbicide performance. That's what University of Guelph weed scientists discovered when they applied herbicides to corn growing under high and low nitrogen fertilization. Green foxtail grown under low N needed six times as much Accent for effective control as did foxtail grown under high N. Higher doses of Accent, Liberty, and Roundup were also needed to control redroot pigweed grown under low N fertilization. However, N fertilization had no effect on control of velvetleaf by Liberty or atrazine. *Source:* Weed Science Vol 52, No. 2, P. 291. cswanton@uoguelph.ca
- Weed scientists at Cornell University attempted to reduce the competitive effects of bluegrass in alfalfa-grass stands by doubling the seeding rate of orchardgrass or timothy, from 5 to 10 lbs per acre. While alfalfa seeded without a forage grass was overrun by bluegrass (especially in the first cut), both orchardgrass and timothy at the 5 lbs seeding rate almost completely prevented bluegrass invasion. Orchardgrass was more effective in suppressing bluegrass, but unfortunately it was also more effective in suppressing the alfalfa. Five pounds of grass was as effective as 10 lbs in suppressing bluegrass. Future research may focus on decreasing the seeding rates of grasses rather than increasing them. *Source:* Russell Hahn. rrh4@cornell.edu
- Maryland research concluded that reducing dairy ration P to recommended levels could have a huge effect on the concentration of phosphorus in manure. In one trial, reducing ration P from 0.47% to 0.39% decreased water-soluble P in the manure by 35%, while in another trial, reducing ration P from 0.52% to 0.35% decreased water soluble P by 56%. *Source:* dou@cahp2.nbc.upenn.edu

CORN "SILVER LEAF"

Young corn plants sometimes develop grey or whitish areas on the horizontal parts of the leaves that face the sky. This is called "silver leaf" and is the result of the radiational cooling that occurs on clear, cold nights. The portions of the leaves that aren't horizontal to the sky, or that were protected by the leaves of other corn plants, don't exhibit silver leaf. The good news is that this condition doesn't affect yield much at all. However, silver leaf is common enough this time of year (we've already seen it in our fields) that we thought you'd like to know what it is.

SOYBEAN RUST: WHY YOU SHOULD CARE

Asian soybean rust, a disease that has lowered yields in many parts of the world, will almost certainly arrive in the U.S. by 2005. The disease itself isn't expected to be a problem in the Northern half of the U.S. since it needs living vegetation to overwinter. It looks like only the Southeastern U.S. (accounting for 16% of U.S. soybean acreage) is really vulnerable. Asian soybean rust is controlled by use of fungicides, which based on South American experience would increase production costs by about \$25 per acre. Once the rust becomes established, USDA predicts slightly lower yields and a net decline in soybean acreage of 1.9 to 5.5%. Higher production costs + lower yields + less acreage = a smaller soybean crop, which would put upwards pressure on soybean meal prices.

FALLING FARMS

Note in the following table that dairy and hog farm numbers have taken a pounding in recent years, with low prices the obvious reason. (Duh.) Now there are almost as many sheep farms in the U.S. as dairy and hog farms. Since sheep farms only declined 3% compared to over 20% declines for dairy and hogs, sheep farms are fast catching up. There are highly visible "Got Milk?" and "Pork: The other white meat" ad campaigns, but when's the last time you saw an "Eat lamb" ad?

Farm type (in thousands)	1999	2003	% change
Cattle	1,096	1,013	-7
Dairy	111	86	-22
Hogs	100	74	-26
Sheep	70	68	-3



CLOSING COMMENT

Marriages may be made in heaven.
However, so are
thunder and lightning.

