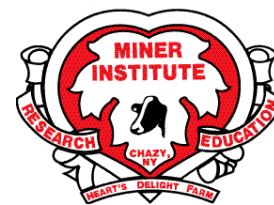


William H. Miner Agricultural Research Institute FARM REPORT



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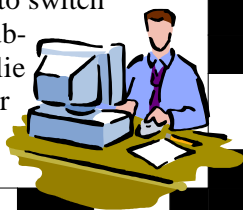
May 2004

NEW INSTITUTE WEBSITE UNVEILED

If you've visited the Institute website (www.whminer.com) in the last month, you've probably noticed a few changes. As has been mentioned in previous issues of the *Farm Report*, we've been working hard to update the content and layout of the website to make it more useful and user-friendly. Now you'll find information on all our programs and educational opportunities, in-depth information on our dairy operations, including our protocols, a calendar of events, publications and research reports, and complete contact information. More importantly, you'll also find our award-winning *Farm Report* and our newest publication, *The Stable Sheet*, in both PDF and HTML versions. This means online subscribers can choose to read the exact same newsletter with all the same graphs and pictures that is mailed to our subscribers, usually days earlier.

And even more is coming—soon the entire website will be searchable. We'll also be adding more content, including a slide show of the construction of our new dairy barn, temperature and other readings from the new barn, and virtual tours of our facilities. To find out the latest from the Institute, check out the "What's New" column on our home page. It'll be regularly updated with the latest news from the Institute.

We'd love to get your feedback on the new website. If you have any suggestions on what else you'd like to see or if you'd like to switch to an electronic *Farm Report* subscription, please contact Julie Layne at (518) 846-7121 or layne@whminer.com.



ADM students earned honors at the 2004 North American Intercollegiate Dairy Challenge. (Back row: Kelly Sabo, Sara Messmer, Hannah Smart, Morgan Greenwood, Wanda Emerich. Front row: Jason Fleury, Jesse Woods.) See complete story on page 3.

ALFALFA WINTERKILL!

The severity of winterkill in the Northeast this spring is highly variable, ranging from near-perfect stands to complete wipeouts. Some fields that were almost 100% alfalfa last fall look like they were sprayed with Roundup. Cornell University has done extensive sampling of dead alfalfa plants, both at Miner Institute and at several other farms in the region, mostly looking for Brown Root Rot. (And thanks to a much appreciated assist in sampling from local crops consultant Eric Bever.) Because the plant pathogens have to be cultured we won't know the causative pathogen(s) for at least a month. But dead is dead, so now what to do?

Alfalfa autotoxicity is a reality, not a rumor, and stands established prior to 2003 should not be reseeded to alfalfa this spring. Ideally, any stand established in

(Continued on page 2)

(Continued from page 1)

spring 2003 shouldn't be reseeded to alfalfa either, but since older stands are more likely to produce toxins, it's a matter of risk-reward. My first choice for fields with alfalfa planted *prior to last summer* would be red clover, but with the apparent extent of the winterkill, red clover supplies may not be sufficient to meet demand. Seeding rate: Normally 6 to 8 lbs/acre of red clover, but you can cut this to 5 lbs to stretch available supplies if necessary. Notilling red clover is fine since clover gets out of the ground fast, but don't notill clover if you have a lot of grass in the field since the grass will provide too much competition. In this case you'd be better off to topdress the grass with N, although it's getting late for that. It's still not a terrible option if you do it right away since any leftover N would be used by the second crop of grass. Another option is to rotate winterkilled alfalfa fields to corn and seed down some of the land you intended for corn—assuming herbicide residues aren't a problem.

Brown root rot (BRR) has been confirmed in Northern N.Y. The disease has been present in Canada for many years, but the extent of our problem isn't known—which is the reason for the sampling program. BRR likes cold climates, and winterkill is one of the prime symptoms of BRR. One suggestion for reducing the effects of this disease is not to cut alfalfa in the fall. Resistant varieties (work currently in progress) appear to be the best alternative since BRR also can occur on other perennial legumes including several clover species and birdsfoot trefoil. Canadian experiences suggest that there are varying levels of resistance in current alfalfa varieties, though we have no idea which varieties have some resistance.

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OUT THERE

—M.T.

Communities and consumers are at the heart of a new effort to encourage environmentally sound agricultural practices. A network of students and researchers from the University of California are doing on-farm research that addresses farmers' questions about how to improve their growing practices and markets while protecting the environment. One of the projects, headed by J. Muramoto, is currently looking at various crop rotation strategies to determine their impact on disease levels, crop performance, and nitrogen.



The **Agricultural Research Service** (ARS) and **Veris Technologies** of Salina, Kansas, are testing a prototype of an instrument designed to provide in-field analysis of key soil constituents. The instrument, a thick soil shank with sensors that take readings through a sapphire window on its bottom, uses near infrared reflectance spectroscopy (NIRS) technology. NIRS has shown good laboratory results for measuring carbon, nitrogen, and other soil constituents, says David A. Laird, who led the research at the Soil and Water Quality Research Unit of ARS' National Soil Tilth Laboratory.



According to Robert Kremer, of the Agricultural Research Service's **Cropping Systems Unit**, weed suppressive soil can develop in most regions and should not be greatly affected by climate or topography. Kremer claims that certain practices can help increase numbers of beneficial microorganisms in soil, making it weed suppressive so that less herbicide could be used on crops. Farmers can grow a cover crop in the winter or consider ways to improve crop residue management.



A **Canadian rodeo contractor** faces criminal charges for importing 28 rodeo bulls into the U.S. Greg Kesler is being investigated for allegedly hauling the bulls from Calgary in Canada to a rodeo in Idaho. Since May 2003 the USDA has placed a ban on all shipments of live cattle from Canada after a case of BSE was discovered in Alberta, Canada. The Kesler bulls have been placed under quarantine in Montana pending further U.S. federal and state inspection. The bulls were commingled with a load of rodeo horses when they were presented at a remote border crossing in northwestern Montana.



The **Vermont House of Representatives** overwhelmingly approved a bill that would mandate manufacturers of genetically engineered seeds to label their products as such. "The Farmer's Right-to-Know Act" (H-777) legally defines GE seeds as different from conventional seeds and requires biotech companies to report their annual sales to the state Agency of Agriculture. The bill, which is the first of its kind in the country, is expected to pass in the Senate and be signed into law by Governor Jim Douglas.

THE END

Judging from the newspaper and popular press it may soon be The End Of Life As We Know It, because store milk prices have already increased by about 15 cents per gallon and in the next month or so may well increase by another 50 cents per gallon. Supermarket managers will soon be placing "It isn't our fault" signs on their milk displays, and editorial writers will wring their hands in dismay. Where were they when farm milk prices were \$11.00 per hundredweight? Starbucks says the increasing price of milk may force them to raise their coffee prices. Huh? People complain when milk increases by a dime per quart, but not when a lightweight head of lettuce costs \$1.89. Methinks that more than the lettuce has a lightweight head. Regardless of the reason, it's a fact that when the price of milk goes up consumption goes down, and by more than USDA once thought. When the farm price of milk comes back down to \$13 or so as we all know it will, we're just sure that Starbucks will decrease their coffee price, and the store price of milk will return to where it's been these past months. Suuure, it will...

Instead of the venerable milk-feed ratio, USDA should publish a **milk-lettuce** ratio. (The milk-feed ratio is the farm price of a pound of milk divided by the price of a pound of 16% grain ration composed of corn, soybean meal and alfalfa hay.) If a quart of milk costs \$0.80 and a head of lettuce costs \$1.60, that's a ratio of 0.5. As long as the annual milk-lettuce ratio is under 1.0 then consumers shouldn't grouse about the price of milk, and supermarkets shouldn't apologize for the farmer. Besides, the milk-lettuce ratio has to be more encouraging for dairy farmers than the milk-feed ratio, which always seems to be in the crapper. Sure, milk prices increased late this winter, but the cost of a 16% grain ration hit a six-

ADM TEAM PLACES IN NATIONAL DAIRY CHALLENGE

The students from the 2+2 program at the University of Vermont/Miner Institute/ Vermont Technical College won a Gold placing in the Third Annual North American Intercollegiate Dairy Challenge (NAIDC) April 2-3, 2004, in Altoona, PA. Penn State University hosted the 2004 contest, with a record number of teams competing.

The ADM team consisted of: Hannah Smart, Morgan Greenwood, Jason Fleury, and Jesse Woods. Wanda Emerich coached the team. In addition, Sarah Messmer's aggregate team placed in the Platinum level and Kelly Sabo's aggregate team was in the Gold level. The two aggregate teams involved students from all across the country.

NAIDC is an innovative two-day competition for students representing dairy science programs at North American universities. It enables students to apply theory and learning to a real-world dairy, while working as part of a four-person team.

Day One of NAIDC began with each team receiving information about a working dairy, including production and farm management data. After an in-person inspection of one of three designated dairies, participants interviewed the herd managers. Then each team developed a farm analysis and presentation materials, including recommendations for nutrition, reproduction, milking procedures, animal health, housing, and financial management.

Day Two was presentation day. Team members presented recommendations to a panel of judges and then fielded questions from the judges. Presentations were evaluated, based on the analysis and recommendations. The evening concluded with a reception and awards banquet.

The North American Intercollegiate Dairy Challenge was established as a management contest to incorporate all phases of a specific dairy business. It strives to incorporate a higher-learning atmosphere with practical application to help prepare students for careers in the dairy industry. Supported financially through generous donations by agribusinesses and coordinated by a volunteer steering committee, the first NAIDC was held in April 2002.

year high.

In the meantime, first the bad news: There won't be a MILC payment for the next few months. Now the good news: See previous sentence. At Miner Institute, after a careful assessment of the milk market, considering both milk price forecasts and dairy economists' analyses, Rick and I decided to start our MILC payments in March rather than in January. MILC payments for the first 4 months of 2004: \$0.83, \$0.95, \$0.79. MILC payment for March: \$0.02. Nailed that one, didn't we?

Dr. Robert Cochran, a Utah veteri-

narian and dairy consultant, cited an upbeat note on milk prices. He says that there are only enough dairy heifers in the U.S. to support a 30% culling rate, while the actual culling rate is somewhat higher than this—on many large farms it's closer to 40%. This heifer shortage will put a serious damper on herd expansion and therefore near-term milk production. Even if the Canadian border opens back up this summer it won't greatly improve the replacement heifer situation.

—E.T.

VET CORNER

For those who drove by the Miner Institute dairy barn last weekend and saw the red vet truck parked all weekend, don't worry. The herd was not having a marathon OB case or surgery session. One of my partners picked me up at the farm and we proceeded to Syracuse for the Northeast Dairy Production Medicine Symposium over the weekend. The weekend was filled with great presentations, which your herd health vet can be discussing with you this month. Two presenters were of particular interest.

Lisa Coffin joined Quality Milk Production Services of Cornell in 2001 and took over their Language Services Program. She provides a wonderful service of bilingual training on NY farms employing Spanish-speaking workers. In addition to training workers to individual farms' procedures, she can help the owners' understanding of the culture and characteristics of the Hispanic worker.

Dr. Sheila McGuirk is a familiar name for Hoard's Dairyman subscribers, as a contributing author of the Veterinary Column on the inside back page. She presented some new facts for this experienced vet to digest. **Did you know that less than 40% of dairies can supply all of their replacements?** When doing the math, it comes as no surprise. On a well-run dairy, about 90% of calves survive the maternity pen and half of them are female which leaves 45 to raise. 10% of the 45 will die or not breed so that leaves 40 replacement heifers for a 100-cow dairy if the heifers calve at 24 months old. With many herds exceeding 40% cull rate, the 40 heifers won't supply all the replacements, so there is no wiggle room for poor heifer management. Maybe this is an area to throw some of your new milk dollars toward.

In past calf mortality investigations, our recommendation has been to test 1-7 day old calves' serum protein level to diagnose Failure of Passive Transfer (FPT). If low serum proteins are found the next step is to improve colostrum management, which includes using a colostrometer. My clients' usual finding is that one out of four cows has adequate IgG, and Dr. McGuirk gave us a clue how to improve these readings. **At the time of birth, 100% of the antibody is present in the colostrum (this is the ideal time to milk out the colostrum).** By six hours after birth, the udder has filled with enough milk to dilute the colostrum so the antibody level drops to 60%, which causes the poor colostrometer reading. Especially in 2X milking herds, this timing of the first milking should be reexamined to see if there is another way to get the fresh cow milked out sooner. Another rule of thumb to follow is that if more than 2 gallons of colostrum are harvested on the first milk-out, the antibody level will be diluted and should not be saved for first day of life calf feeding.

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FIRST CUT GUIDELINES

Tom Kilcer from Cooperative Extension in Rensselaer County (NY) may not be too tightly wrapped (just kidding, Tom), but he has some worthwhile suggestions for when to make first cut:

- When alfalfa is 16-17" high, cut your straight grass stands.
- When alfalfa is 23-24" tall, cut mixed grass and alfalfa stands.
- When alfalfa is 30-32" tall, cut straight alfalfa and mostly alfalfa stands.

These suggestions are certainly worth considering, but we'd add that regardless of height, alfalfa should be harvested before it blooms. In fact, a reasonable goal is to time alfalfa harvests so that it never blooms. Harvesting at the mid or late bud stage will provide the best combination of yield and quality. However, if something happens to prevent timely harvest (this is called "weather"), increasing cutting height can improve alfalfa forage quality. The reason we underline alfalfa is that recent work by Jerry Cherney at Cornell found that increasing grass harvest height by one inch only increased crude protein by 0.38% and decreased NDF by 0.33%, while reducing yield by 5- 10%. Therefore there's no percentage in increasing grass harvest height to increase quality. If you have an alfalfa-grass stand, your decision would depend on what percentage of the stand is alfalfa.

—E.T.

EPA ISSUES SECTION 18 FOR WARRIOR

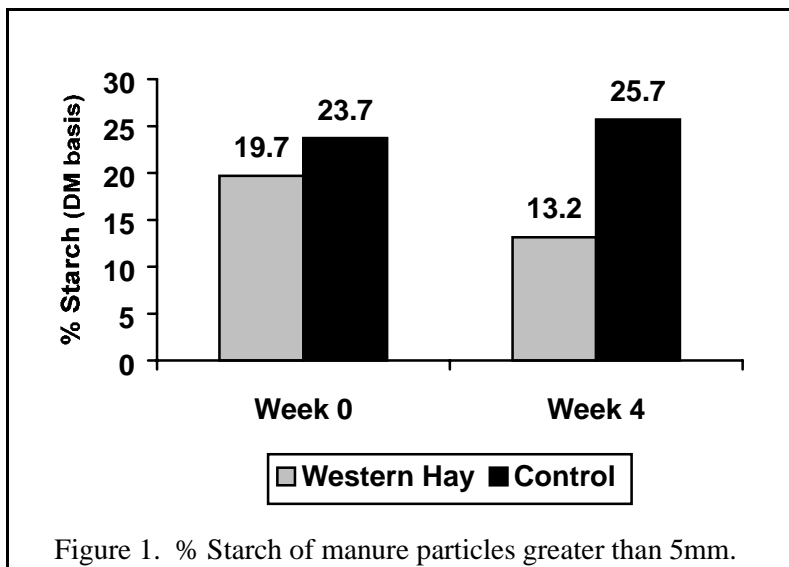
While leafhopper-resistant alfalfa varieties are the best way to prevent leafhopper damage to alfalfa, there are a lot of non-resistant alfalfa-grass stands susceptible to attack in 2004. That's why EPA recently granted to NYDEC a one-season "Section 18" exemption that will allow application of Warrior insecticide to mixed stands. The exemption begins on June 1st and ends on August 31st. There are restrictions as to rate, total amount used per season, maximum N.Y. acreage that can be sprayed with Warrior (wouldn't you like to know how they'll monitor that one?), and proximity to water bodies. Warrior is very toxic to fish, so keep ground applications at least 25 feet from rivers and other water bodies.



FORAGE LAB NEWS

There was a recent discussion on the Dairy-L message board about the Corn Silage Processing Score procedure put forth by Dairyland Laboratories, in conjunction with Dr. Dave Mertens of the U.S. Dairy Forage Research Center (Madison, W.I.). The procedure is a means of quantifying the effectiveness of kernel processing for optional starch utilization in the cow. The method involves particle separation of dried corn silage samples using a vertical shaking method. The resulting separation fractions out corn kernel fragments by size. It is recommended to have more than 70% of total corn silage starch in the fraction of particles smaller than 4.75 mm, few large kernel fragments. Too many large kernels equals poor digestibility. Too many fine particles results in rapid digestion, low physically effective fiber, and possible rumen acidosis. There is much debate concerning the point at which the costs of processing, including equipment, fuel, and time, begin to outweigh the nutritional benefits of reducing particle size with processed corn silage.

As part of our Western alfalfa hay trial we screened manure using the Cargill Manure Separator and analyzed the particles retained by the top screen (larger than 5 mm) for starch, primarily large corn silage kernel fragments. Prior to feeding the hay to pen 1 high group cows at 2.5 lbs/cow, the percent starch of particles retained on the top screen was 19.7% (see Figure 1). For pen 2 high group cows, the control group, the average was 23.7%. After four weeks of feeding the alfalfa hay to pen 1 cows, there was a drop in corn kernel starch retained on the top screen of the separated manure. The pen 2 cows showed no difference in starch particles retained on the top screen.



From these preliminary results it appears that providing the long forage particles of the hay helped retain large corn silage kernels in the rumen, minimizing their passage into the manure. When considering proper kernel processing parameters such as roller clearance and theoretical length of chop with regards to nutritional benefit and economic cost, don't forget to consider the nutritional options that can help aid in digestion of larger starch particles.

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FARM NOTES

- Adoption of biotech corn and soybeans is still on the rise, according to the most recent USDA Prospective Plantings report. Genetically modified (GM) soybeans are seen reaching 86% of planted acreage this year, with 46% of corn acres planted to GM hybrids.
- Only 71 counties in the U.S. now produce 50% of the milk, down from 82 counties five years ago, and 13 counties (all but one in the West) now market 25% of the milk. In the last five years, 734 counties increased milk production, but 1,469 counties lost milk.
- N.Y. Governor George Pataki has a farm 50 miles south of here in Essex and reported a loss of \$46,921 from 2003 farming operations. His only income was \$3,000 from the sale of alfalfa hay. His expenses didn't include a single dollar for fertilizer. Geez Guv, maybe you could improve your farm's bottom line by fertilizing your alfalfa—not exactly a novel concept (at least not to farmers).
- Winners and losers: Farmers fared well in a recent National Corn Growers Association poll of over 1,000 Americans. Respondents said that U.S. farmers have a strong role in healthy and cost-effective food production, and only 7% said that animal rights groups were highly influential in their food buying decisions. However, a significant number said they'd be willing to pay more for food certified as being "humanely raised."
- Part of McDonald's new "Happy Choices" Happy Meal offerings will be "McDonald's Milk Jugs," 8-ounce plastic, resealable bottles of white and chocolate milk with kid-friendly labeling.



WHAT'S HAPPENING ON THE FARM

The steer operation has become unsustainable! Not environmentally nor financially: Goodness, we have been getting between \$0.58 and \$0.88 per pound at the auctions. That kind of return from animals that spend all year outdoors, eating either grass or milking cow and heifer TMR refusal is not a result to be sneezed at. However, we are expanding our dairy operation, buying a substantial number of pregnant heifers and first lactation animals. This increase in numbers places additional demand on our labor, plus there is a requirement for more grazing space for dry cows and heifers, hence the decision to sell off the steers and devote our pastures and labor to optimizing the new dairy facility. In a later issue, once we have collated all the information and numbers, we'll detail the results of raising dairy steers outdoors here in the frigid North Country. Briefly, even though some of our staff thought they made the place look ugly, raising steers can be lucrative and a positive management component to a successful dairy system in the Northeast.

Nitrogen fertilizer has been spread on grass fields, and we've seeded two small fields to alfalfa-grass. Initially we thought the land would be too wet to support "heavy steel," but the equipment didn't sink and the eagerness and smiles from the Crops Crew to get out were well worth the risk. Ev has bought our seed supply, and additional fertilizer is safely stored ahead of the busy season. Rather than use fuel-guzzling machinery in the places we plan to sow fescue and clover, we have allowed the steers to be the traffic that churns up the previous sod and prepares the tith—it's worked well!

Well, our experiment raising calves outdoors (chained to hutches) throughout the below-zero temperatures of winter was a resounding success, so much so that it even astounded our rather skeptical calf nutritionist from FCI. Even in the alarming temperatures of this past January the calves *gained* weight. Granted, we also increased their feedings to three times per day, at a rate of 15% of body-weight. No calf died from the cold, exposure, or any weather-related illness. This is a remarkable achievement, and an indication of the level of care administered by our Calf Supervisor, Beth-Ann Basto.

Reproduction rates have returned impressive results as well. The dairy barn staff and our vet, Dr. Kent Henderson, are overjoyed with the leap to a 21% pregnancy rate—also a sign of how committed the dairy employees are to catching heats and getting animals bred. At a recent repro meeting an amiable debate raged about conception rates and pregnancy rates—and the validity and use of the former—reality versus statistics, record-keeping flaws and nutrition, but in the end the majority of people present

seemed content with the forward progress and proactive action being taken on reproduction.

By the time this issue goes to press we will have moved our heifers and far-off dry cows into the new dairy barn to "season" the pens ahead of the lactation herd. It's an exciting time here at Miner Institute. In the months to come we will fill the new facility with milking animals, get various fields planted to maize and pasture grasses, start a new Agriculture and Environment university-accredited course, start the heifers and dry cows on a rotational grazing system, and re-engage ourselves with outside life again; winter but a distant memory.

Marco Turco

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LAND-GRANT SYSTEM IN TROUBLE

A recent article in *The Chronicle of Higher Education*, "The Demise of the Agricultural Land-Grant System,s" focuses on the crisis facing state land-grant colleges. "Crisis" isn't the most appropriate term however, since the decrease in government support of agricultural research, teaching, and extension extends back fifty years. Decreasing federal appropriations means that the states have had to take up the slack and are now the primary supporters of ag research and extension. However, many states are in dire financial straits themselves.

There's less support from the general public for agricultural programs in part because of the seeming disconnect between farming and food. Potatoes are a prime example: When we buy fast food potatoes we get frozen French fries or a molded potato breakfast slab. When many people shop for potatoes they don't go to the Produce section but to Frozen Foods where they buy shoe-string potatoes, tater tots, curly fries, potato logs...few of which resemble a potato in appearance or taste. Is it any wonder we're raising a generation of children for whom ketchup is an essential companion to potatoes? As these children mature into voters (and—scary thought—politicians), how important will they think it is to support potato research programs?

We don't have to go far to see the effect of the budget crunch on Cooperative Extension programs. Regional agricultural extension professionals in Vermont have more than enough to do for a full-time job, but are only paid for a four-day workweek. When regional agricultural extension programs in New York State lose a person from retirement or relocation, the position may well disappear, as recently happened in Western N.Y.

The Land-Grant system is the reason the U.S. is pre-eminent in food production and is the world's #1 food and feed exporter. But unless our elected officials decide that agricultural research and extension are priority programs, how much longer will the U.S. be #1?

—E.T.



FROM THE PRESIDENT'S DESK— LOOK NORTH FOR BEHAVIOR INFORMATION

As I write this article, I'll be leaving for a three-day workshop in sunny California tomorrow. The meeting is actually in a hotel somewhere in "beautiful" Fresno, so I can't say I'm particularly excited about the trip itself, especially with the weather becoming warmer here by the day. But I'm excited about the topic I get to discuss out there—the latest in feeding behavior research and how we can improve feed intake and feed efficiency in our dairy cows.

Last month I wrote about recent research conducted at Purdue University that explored the relationship between prepartum resting and ruminating behavior and postpartum feed intake. You'll recall the take-home message was that increased resting time about one week before calving was associated with greater feed intake two weeks after calving. In the most recent issue of the *Journal of Dairy Science* there were three outstanding papers that evaluated different aspects of how facilities and management routines influence cow feeding and resting behavior. All three studies were conducted at the University of British Columbia by one of the most productive research groups in the area of cow well-being and productivity. Honestly, we dairy scientists in the US could benefit by adopting some of our Canadian colleagues' research approaches.

The first study evaluated the effect of 20 versus 40 inches of manger space per cow on aggression and feeding behavior. Of course, current recommendations are for 24 inches of manger space per mature cow. Several studies have shown that when about 20 to 24 inches of manger space are provided per cow, only 66 to 70% of cows feed simultaneously. The authors of the recent paper suggested that 20 to 24 inches must limit animals from feeding simultaneously, particularly at times when the bunks are most heavily used (such as when cows return from the parlor). If feeding space is limited, then increased competition among cows could result in some cows changing their feeding behavior to avoid aggression by more dominant cows. In fact, subordinate cows may begin to consume meals more rapidly (i.e. slug feeding with greater risk of DA and acidosis) or eat more in the evening when the TMR has already been extensively sorted (i.e. of lower quality).

The research reported this month does show a positive impact on behavior: When manger space was increased from 20 to 40 inches per cow there was 60% more space between animals, 57% fewer fights, and a 24% increase in feeding activity especially in the 90 minutes after providing fresh feed. These researchers recommended that the industry standard for manger space should be increased. What do you think? From the cow perspective, increasing manger space clearly improved feeding, but what would the eco-

(Continued on page 8)

RESEARCH SUMMARIES

- ✓ A **Danish** study found that shortening dry periods to less than 35 days reduced milk production by over 4 lbs per cow and resulted in higher somatic cell counts. The same study also found that dry periods longer than 50 days weren't economical. These results would suggest that 40 to 50 day dry periods are most economical.
- ✓ **Cornell University** seeded reed canarygrass at rates of 5 to 25 lbs/acre, to see if higher seeding rates would result in a significantly better stand and, therefore, higher yields. They seeded in 2001 and found no meaningful difference in the seeding year. In 2002 there was no yield response past 15 lbs/acre, and in 2003 no yield response past 10 lbs/acre. The current Cornell recommendation for reed canarygrass is 8-10 lbs/acre.
- ✓ **Texas A & M** researchers applied Roundup Ultra herbicide to a range of soils varying in fertility. The objective was to find if Roundup Ultra had any negative effect on soil microbial activity. They found that Roundup Ultra actually stimulated microbial activity, mostly in the first 14 days after the herbicide was applied. Their conclusion was that even at high application rates, Roundup Ultra is rapidly degraded by soil microbes regardless of soil type or organic matter content. *Source: Journal of Environmental Quality, May 2002.*
- ✓ A **Dutch** study found that asthma risk in two-year olds was reduced significantly by a diet that included whole milk, yogurt, and butter. Compared to children consuming less dairy products, by age three the "dairy kids" had fewer than half as many asthma cases.
- ✓ **University of Tennessee** wildlife biologists have discovered that since biotech cotton became available in 1966, songbird populations in habitat around cotton fields has increased by 10-37% in four southern states. That's most likely because decreased insecticide applications leave more insects for birds to eat in these areas.



(Continued from page 7)

nomics of this decision be? I think the optimal approach for any dairy will need to balance cost of the system (on a herd basis) with individual animal response.

The second study concluded that rubber flooring in front of the feed bunk had minimal effect on the time budget of dairy cows. This surprised me because my natural inclination would be that cows prefer to stand on rubber and that some benefit would accrue. In this study, the researchers only noticed a small increase in standing time with the rubber flooring. This particular study was short-term (three-week periods), and I wonder about more long-term ramifications of having rubber flooring available to cows. Some previous studies have shown that cows have a definite preference for rubber flooring when given a choice between rubber and concrete. And, how many times have you seen cows specifically choose to walk on rubber belting (versus the grooved concrete floor) when returning from the parlor or elsewhere? Again, we need more research to nail down the economic consequences of different flooring surfaces.

Finally, the third paper evaluated 42, 46, or 50-inch stalls for mature dairy cows and concluded that the 50-inch stall resulted in more time spent lying down, and less time perching in the stall, but the larger stalls were also more likely to become dirty. We need more controlled studies on appropriate dimensions for free stalls. It is important to point out that these were mattress stalls, and it is quite possible that results would differ with sand. I have more than a passing interest in this type of research since the new Institute barn has 50-inch stalls. Long-term, we will be providing updates on how they perform and what the pros and cons will be of these wider stalls. Stay tuned.

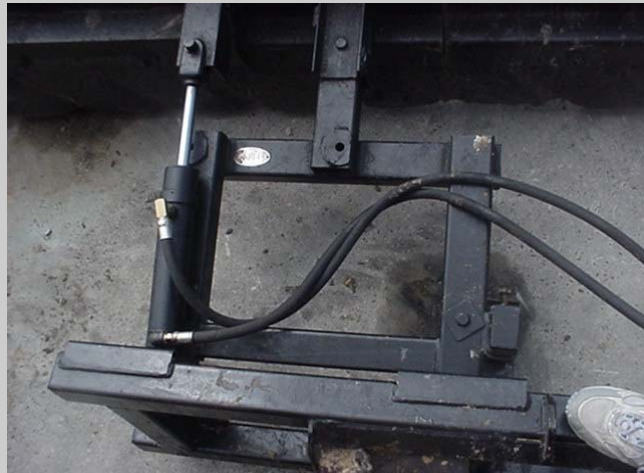
Rick Grant
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LABOR SAVER FOR THE FEEDER



Brian LaFountain who works in the Dairy Barn as the Feeding Supervisor fabricated this attachment for the skid steer loader to clean up refusal and push up feed for the cows in our new dairy barn. Brian offset the pusher to keep the skid steer tires off of the tiles on which the TMR is served to the cows and utilizes a piston to angle the blade as he pushes up feed and cleans out the refusal. The bottom part is a rubber tire and top is steel. If you need more detailed photos, please contact Wanda Emerich.

Wanda Emerich
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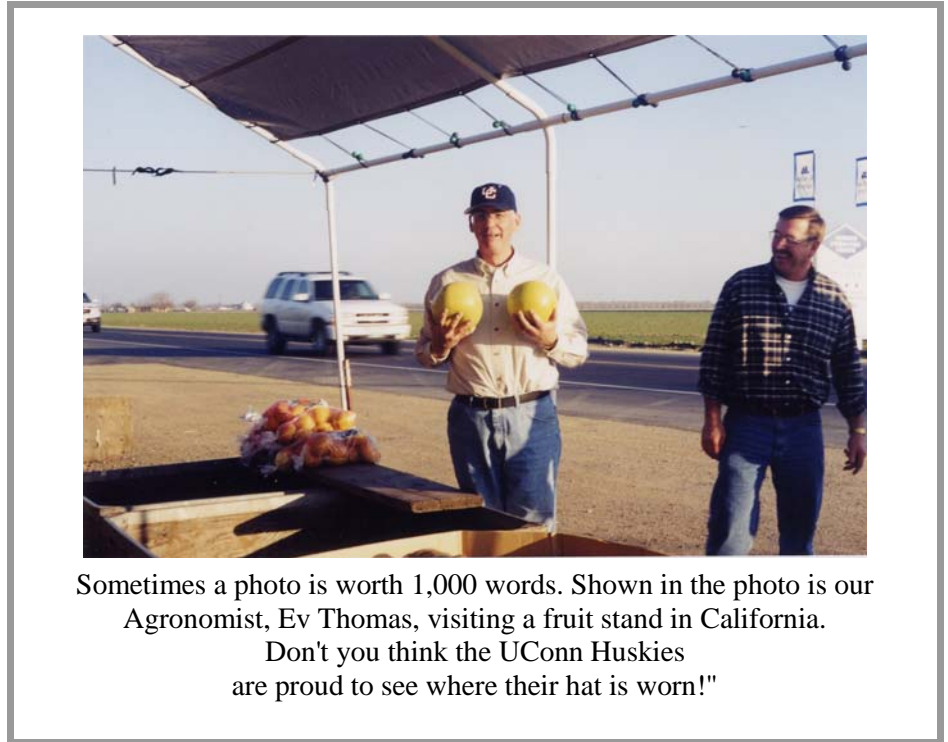


CORN GROWTH STAGES

Often farm magazines discuss corn growth states in terms of V2, V5, etc. What does this mean? Here is a list of early corn growth stages using the “V system”, and how tall your corn is (in inches) at each stage:

- V1 2-3”
- V2 3-5”
- V3 5-8”
- V4 6-10”
- V5 10-15”
- V6 15-24”

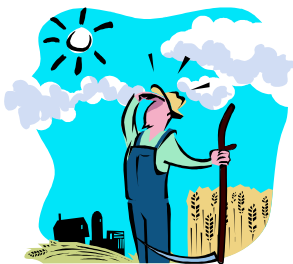
With normal weather conditions it takes about 5 days to develop each new V stage, from V1 through V6.



GRASS FOR BIOFUEL

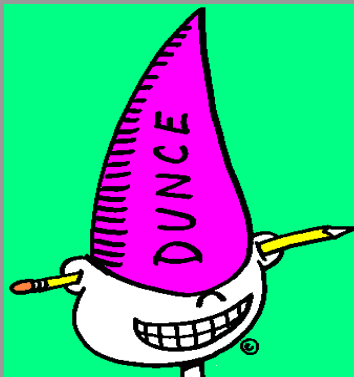
Cornell agronomists are doing research on the use of forage grass as an energy source. The idea is to let the grass get really mature, then mow it and let it set around for a while, getting rained on once or twice, which leaches most of the minerals out, then they pellet the highly fibrous material that's left. This is called “biofuel.”

This technology should come easily to many farmers in the Northeastern U.S., who have been doing this for generations. They let the grass get really mature, then mow it and let it set around for a while, getting rained on once or twice which leaches most of the minerals out, then they bale the highly fibrous material that's left. If fed to hay burners this is called “horse hay;” if fed to dairy animals it's called “heifer hay.”



NEW RESEARCH REPORT AVAILABLE

“Nutrient Stratification in Four Crop Production Fields” is a summary of research conducted at Miner Institute in 1994 by Dr. David Lang from Mississippi State University, while he was here on sabbatical leave. It evaluates soil characteristics at six depths, with discussion of the pollution potential as influenced by soil pH and fertility. This report is available on request, and also on our website.



CLOSING COMMENT

Ignorance can be cured.
Stupid is forever.