

UNIVERSITY OF MINNESOTA

# DAIRY Initiatives



N E W S L E T T E R

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SEE INSERT FOR CALENDAR OF EVENTS

## Grow Before You Let Go?

Modernization can boost retirement security, give new generation a good start

By JOSEPH KURTZ  
University of Minnesota Extension Service

"If you are looking at buying a business, you are likely to want one that's modern, efficient, profitable, and of a size that will provide you with a desirable standard of living and quality of life. And a business that's worth more to you as a buyer is worth more to the seller."

Tim McNamara's analysis certainly applies to young people interested in buying a dairy business from a producer approaching retirement. McNamara is vice president of AgStar Financial Services Dairy Business Group.

"The numbers tell us that the dairy industry in Minnesota is shrinking," says McNamara. "I believe one reason for this is that young people who have grown up on the farm are not being given the opportunity to buy into a viable, thriving business."

Minnesota has a generation of dairy producers at or close to retirement. "If these producers are willing to make investments that will enhance the attractiveness of their businesses, it will create more demand for the businesses," says McNamara. "That will make it more likely that their retirement cash flow will be more sustainable."

A 60-year-old producer may question the wisdom of modernizing. "If I'm that producer, it could be the wisest investment I could make because I could increase the value of the business," says McNamara.

Many producers look to cash from the sale of their dairy business to provide retirement. "If you enhance the value of the business, you enhance the value of the revenue stream created by the business," says McNamara.



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### Making the Transition

A producer who has put this into practice is Stanley Diers. Stan and his late wife, Geneva, raised four children on their 290-acre farm, Stangen Holsteins, in Wright County. In 1993 they were milking 44 cows, and the children had all moved off the farm.

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## Grow Before You Let Go?

*Continued from page 1*

“Geneva and I came to the point where we knew we couldn’t dairy without help,” Stan recalls. “I didn’t have enough land to be a crop farmer, and that really wasn’t my first love—dairy was. I was also getting more involved in dairy boards, which required time away from the farm.”

The Diers children include daughters Julie and Linda and sons Phillip and Alan. Linda majored in agricultural education at the University of Minnesota. In 1990 she married Sean Groos, who had grown up on a South Dakota farm and was working with a dairy processing plant in New York. The couple moved to Minnesota in 1991. Linda took a job teaching adult farm management, and Sean began selling feed. They both wanted to get back into farming.

“I had a very positive experience growing up on the farm,” Linda says. “I knew the farm was where I wanted to live and raise a family someday.”

In 1992 Sean and Linda bought some heifers. They also had a FINPACK financial analysis run to see how many cows they would need to support both their family and Linda’s parents. They decided to double the number of cows and youngstock and build an 88-foot by 120-foot curtained freestall barn with 108 stalls and an alley for drive-through feeding.

### 50-50 Partnership

The 50-50 partnership began June 1, 1993, and the farm was renamed Stangen-Minkota Holsteins. Sean and Linda lived in town. Stan and Geneva lived in the main farmhouse, and Stan’s parents lived in another house on the farm.

Stan, who was without debt before joining the partnership, paid for the con-



Sean, Linda, and Luke Groos and Stanley Diers

struction of the freestall barn. “I was able to borrow the money—the partnership didn’t have that kind of equity,” he says. “Then I received a monthly lease payment on the barn from the partnership.” The partnership bought equipment needed to feed a total mixed ration.

Stan and Geneva retained ownership of the land and the crop machinery. They received a monthly payment for the corn silage and haylage produced on the farm that covered out-of-pocket crop production expenses, but not labor, since Stan and Sean both worked on crop production.

For two years, cows were milked in shifts in the 44-stall tie-stall barn. In June 1995 the partners remodeled the barn into a holding area and a step-up flat barn milking parlor with eight stalls. They also bought used milking equipment for about a quarter of the price of new equipment.

In 1994 Stan’s parents moved to town, Stan and Geneva moved into the house where his parents had lived, and Sean, Linda, and their daughter, Rebecca, moved into the main house.

“It was just a miracle the way it fell into place,” says Stan. “My parents were

getting to the point where the house was too much to care for. They needed to go to an apartment—it was their decision. Sean and Linda were ready to come to the bigger house. Nobody felt pushed out.”

Rebecca was joined by brothers Ethan in 1995 and Luke in 1998, and baby sister Bethany in 2001. Geneva died of cancer in 1998. Stan has since remarried, and he and his wife, Sharon, have built a new house on the farm.

### Full Share

The 50-50 partnership continued until 1998, when Sean and Linda went to a 75 percent share. The partners tallied up all the assets of the partnership, minus the debt, and Stan financed the purchase of the quarter share. At the beginning of 2002 Stan sold his remaining quarter share to Sean and Linda.

The farm is now called Minkota Holsteins. The number of cows milked has gradually increased to about 140 head, with a herd milk production average of 25,000 pounds. Sean and Linda now own all the livestock and livestock equipment. Sean, outside the partnership, has purchased most of Stan’s tillage machinery. Stan continues to own

the freestall barn and half of the farmland. Geneva's half of the farmland is in trust to Stan and Geneva's four children, and Stan rents that half from the trust.

Is Stan better off now than if he had just sold the cows and quit milking in 1993? "Very much so," he says. "My equity is far greater now than when the partnership began. There's no way I could have accumulated as much by crop farming. And I couldn't have dairied on my own. I wouldn't have been one to build a new dairy and run it with hired help."

### Keys to Success

Stan, Sean, and Linda agree that communication is a challenge in a partnership and an area where there is always opportunity for improvement. They also say that in a partnership between generations, it's a good idea for the younger partner to contribute some equity, thus having a financial stake in the operation.

Linda says a low debt load has contributed to the success of the partnership. "A high debt load will keep dragging you down," she notes.

Sean says he has seen father-son partnerships where "the dad just doesn't want to let go."

"The senior partner has to learn that to make it work he's going to have to make changes," Sean adds. "Otherwise, the younger partner will get frustrated and look for another way to make a living."

McNamara recommends that families looking at setting up a partnership seek experienced, professional legal and tax advice. "The warning, 'Don't try this at home,' applies," he says.

McNamara says he sometimes hears doom and gloom about the future of dairying in Minnesota. "It doesn't have to be that way," he says. "We have the knowledge, ability, resources, and experience to revitalize Minnesota's dairy industry. Transferring a dairy business as a going concern, rather than dismantling the business and selling the assets, can contribute to that revitalization." 🐮

# Can You Afford to Lose Calves?

By KEVIN JANNI

Department of Biosystems and Agricultural Engineering  
University of Minnesota

The answer is absolutely not! Present high cull rates and low reproductive performance in most dairy herds as well as increasing demand for heifers caused by large herd expansions have made heifer prices skyrocket. This is a great opportunity for those who can minimize cull rate, maintain herd reproduction, and successfully raise healthy calves.

Replacement heifers are the future of a successful dairy. Well-planned calf and heifer facilities and excellent management can enhance health and growth and give your calves the start they need to become productive cows.

Facilities need to be economical, environmentally friendly, labor and time efficient, and safe for workers and animals.

Good facilities have:

**Isolation.** Preweaned calves have limited disease resistance. Isolation helps prevent nose-to-nose contact and minimizes calves' exposure to contaminated pen surfaces, manure, and equipment until their immune system develops more fully.

**A clean and dry place to lie.** A clean, dry, well-bedded place to lie helps minimize manure exposure and chilling.

**Plenty of fresh, clean air.** Good ventilation minimizes exposure to ammonia and airborne pathogens. It helps cool in hot weather and removes moisture in cold weather.

**Freedom from drafts.** Drafts are undesirable cooling air movements. Calves and heifers can do very well in cold weather if they can avoid cold drafts.

**Easy access to feed and water.** Calves need easy access to feed and water in clean equipment for good growth.

**Easy access for caregivers.** A job is more likely to be done well if it is easy to do.

Well-planned facilities make it easy for caregivers to observe, feed, water, add bedding, remove manure, provide health care, clean and sanitize, and keep accurate records. Be sure to include space and equipment for restraining animals safely during treatment. 🐮

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### TYPICAL CALF-RAISING FACILITIES INCLUDE:

- Hutches
- Individual pens in cold housing
- Stalls or pens in warm housing

### HEIFER HOUSING OPTIONS INCLUDE:

- Fenced pastures
- Mounds in a feedlot
- Bedded pack
- Freestalls

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John Bush ©2002

# Candid Camera on Cow Comfort

*Video recordings offer valuable clues to improving cow health and milk yield*

By NEIL ANDERSON  
Ontario Ministry of Agriculture

**V**ideo recorders are helping improve dairy farming in Canada. By videotaping cows on pasture and in barns, researchers are learning about cows' space needs. That information can then be used to design facilities to minimize stress and abnormal behavior and improve cow comfort and productivity. The payoff? Less culling, more milk, and better health.

## Cow Ergonomics

Cow ergonomics concerns the improvement of a cow's health and performance through the careful design of her work envi-



John Bush ©2002

ronment. Ergonomic innovations in dairy barn design and construction aim to increase cow health, safety, and longevity. To build ergonomically correct stalls, we need to recognize normal resting positions, rising motions, and lying motions. We also need to know cow size and space requirements.

## What Resting Cows Need

Video study of pastured cows indicates that cows normally assume several resting positions. To accommodate these positions, the resting area must provide cows six freedoms:

1. the freedom to stretch their front legs forward
2. the freedom to lie on their sides, with unobstructed space for their neck and head
3. the freedom to rest their heads against their sides without hindrance from a partition
4. the freedom to rest with their legs, udders, and tails on the platform
5. the freedom to stand or lie without fear or pain from neck rails, partitions, or supports
6. the freedom to rest on a clean, dry, and soft bed.

The resting area also must provide cows with free vertical, forward, and lateral movement so they can get up and down without obstruction, injury, or fear.

## Freestall Recommendations

W.B. Faull and J.W. Hughes observed Friesian-Holstein cattle freely lying and rising in a field in the United Kingdom (Table 1). They concluded that freestalls should offer 95 inches by 47 inches of living space and 24 inches more of lunging space for rising.

One problem in many freestalls is that cows tend to stand and lie sideways in short side-lunging stalls or in stalls where the neck rail is too low and/or too close to the rear of the stall. As a result, they defecate on the stall corners.

## Signs of Trouble

**Stress, fear of harm, and discomfort are bad for cows. Because they reduce production and increase health problems, they're also bad for your bottom line. Are your facilities harmful or stressful to your cows? Here are some signs they might be:**

- **INJURIES.** Cows have abrasions or other injuries to hocks, knees, or stifles, or bumps over the top line or rib cage.
- **RELUCTANCE.** Cows don't like to use stalls or move slowly in and out of the milking parlor.
- **HESITATION.** Cows stand uncertainly in a stall for several minutes before lying down, or lie for a long time before standing up.
- **POOR POSITIONING.** Cows lie partially in the stall and partially in the alley, or choose to lie in the alley.
- **INAPPROPRIATE BEHAVIOR.** Cows rise like horses, back into stalls, paw bedding out of stalls, or show abnormal behavior at feed bunks or around waterers.
- **TROUBLE WITH FOOD OR WATER.** Cows lap at water or chew on water bowls, toss feed, or fling water when drinking.
- **LACK OF ESTRUS.** In barns with slippery floors or those with short tie chains and electric trainers, cows may protest silently by not showing signs of estrus.
- **PHYSICAL AILMENTS.** Cows show problems such as sore feet, mastitis, and metabolic diseases.

**Point to Ponder: We all like clean stalls. But the cleanest stalls are those with the lowest occupancy rate. Innovative producers are willing to design stalls for cow comfort and invest more labor in stall maintenance.**

*Table 1.  
Freestall Design Recommendations for Mature Adult Holstein Cows*

| FEATURE                           | VIDEO STUDY SUGGESTIONS | MIDWEST PLAN SERVICE      |
|-----------------------------------|-------------------------|---------------------------|
| Stall length                      | 9 feet                  | 7-8 feet                  |
| Stall width                       | 48 inches               | 45-48 inches              |
| Brisket board (or equivalent)     | 71 inches (poly pillow) | 66 inches (brisket board) |
| Area in front of brisket board    | same level as stall     | no recommendation         |
| Curb to neck rail position        | 68 inches               | 66 inches                 |
| Stall surface to neck rail height | 50 inches               | 42-45 inches              |
| Stall front                       | open                    | no recommendation         |

Some fix this problem by narrowing stalls, forcing cows to lie straight so they defecate in the alley. Although this keeps stalls clean, it creates more problems because cows get restless and can't keep their tails or legs on the platform. Their tails and feet become soiled and drag manure back onto their bed, raising the risk for environmental mastitis. A better solution is to build open-front freestalls, raise and reposition neck rails, widen stalls, and change the position and style of brisket restraint.

Researchers have developed a set of recommendations for freestall design based on video recordings of cow behavior. Table 1 shows how those recommendations compare with Midwest Plan Service stall design recommendations for mature adult Holstein cows.

**Tie-Stall Suggestions**

In tie-stall barns, short platforms, narrow stalls, high manger curbs, low tie rails, and short tie chains alter normal cow behavior and reduce lying time. This can contribute to problems with social behavior and lameness.

A switch to stalls with longer and wider platforms, tie rails higher above the bed and forward of the manger curb, open-front stalls, and longer tie chains will virtually eliminate "stupid heifer syndrome"—troubles with cows banging themselves up—and the difficulties of rising experienced by some older cows. On one farm, average lying time increased from 11 hours to 14.3 hours per day after tie chains were lengthened and more straw was added to the rubber mats.

In Canadian tie-stall barns, many owners are installing the



**Restlessness and Stall Sores**

Restrictive stalls lead to restlessness. In the photograph, notice that the brisket board prevents the cow from extending her front legs forward and positions her towards the curb, and her leg and tail hang into the alley. When viewed on video, cows in similar stalls changed positions several times per hour. Their top hind legs moved into and out of the alley 15 to 30 times per hour and their bottom hind leg moved across the mattress 6 to 10 times per hour. Such restlessness can lead to abrasions.

After viewing a video of his cows' behavior in stalls, one owner who had been having trouble with hock lesions removed the brisket boards and raised the neck rail to 50 inches above the mattress. Stall usage and cow behavior changed immediately. Within six months, the majority of the hock lesions had healed.

single tie rail 48 inches above the mattress and 14 inches forward of the manger curb in barns with 72-inch platforms. The most common stalls are 54 inches wide and 70 or 72 inches long. The new stalls provide 22 to 24 inches of unobstructed access to water bowls. Tie chains need to be 40 inches long for stalls with 48-inch tie rails.

Some owners build stalls for their biggest cows with the tie rail 50 inches above the mattress and 10 inches forward of the manger curb. Some barns have stalls of three sizes for cows in three size ranges. Stall widths and platform lengths vary from 54 inches wide and 68 inches long for first lactation heifers, to 60 inches wide and 72 inches long for the largest cows. 🐄

# Economics of Modernization

By WILLIAM LAZARUS  
Department of Applied Economics,  
University of Minnesota

Minnesota dairy facilities are among the oldest in the United States. This contributes to the high cost of production compared to other regions. Modernization projects tend to improve output relative to the amount of labor and equipment without investing beyond what the farm's equity capital base can support. Historically, dairies producing more than 600,000 pounds of milk per full-time worker per year were considered efficient and productive. Modern dairies set

productivity goals of more than a million pounds of milk per full-time worker per year.

Maybe it's time to think about modernizing your dairy facility. There are three main ways to do so: 1) add more tie stalls and continue to milk in the existing barn, 2) build a large, all-new parlor-freestall facility, or 3) turn an existing building into a parlor. This article will show you some of the economic considerations involved in deciding if and how to modernize.

## Case Studies

To compare the economics of various modernization options, let's look at three Minnesota farms that recently modernized (Table 1). One farm installed a double-10 swing parlor in the old tie-stall barn, but cow numbers at the time of this

comparison were lower than planned, thus explaining the lower pounds of milk per worker per year than the other two alternatives. The second installed a double-6 flat-barn step-up parlor, built a milk house, and bought a larger bulk tank, explaining some of its higher parlor cost compared to the other alternatives. The third installed a double-4 step-up parlor in the old tie-stall barn. All three built freestall barns to house the cows.

Now, let's look at a "typical" dairy farm and analyze how adding a retrofitted parlor would compare to expanding the tie-stall barn or building an all-new facility. Analysis is shown in Table 2.

The first column shows a typical tie-stall situation. Net farm income was based on a production level of 22,000

Table 1. Description of Three Case Study Modernization Alternatives

| DESCRIPTION        | PARLOR COST | HERD SIZE | MILK/ COW (LB.) | WORKERS (FULL-TIME EQUIVALENT) | MILKING (HOURS/DAY) | COWS MILKED/ HOUR | COWS/ WORKER | MILK/ WORKER (LB.) |
|--------------------|-------------|-----------|-----------------|--------------------------------|---------------------|-------------------|--------------|--------------------|
| Swing parlor 2x10  | \$38,000    | 110       | 21,000          | 3.0                            | 4                   | 46                | 37           | 770,000            |
| Step-up parlor 2x6 | \$100,000   | 200       | 23,500          | 3.5                            | 7                   | 48                | 57           | 1,342,857          |
| Step-up parlor 2x4 | \$30,000    | 143       | 27,000          | 3.5                            | 6                   | 40                | 41           | 1,103,143          |

\*Assumes 85 percent of the cows are in milk, twice-per-day milking

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## What's the Objective?

How do you measure success in modernizing? Two important measures are return on equity (net farm income minus a desired return for your labor) and net farm income, which reflects returns to all three of the main resources required to farm—labor, management, and capital. Cash available for family living is also important. And don't forget to factor in nonfinancial goals, such as improving worker comfort, freeing up time for family activities, and the desirability (or undesirability) of being a people manager as well as (or instead of) a farm laborer.

Table 2. Projected Dairy Enterprise Budget Under Three Expansion Alternatives

|  | PRESENT TIE-STALL BARN | EXPAND TIE-STALL BARN | RETROFIT PARLOR | ALL-NEW FACILITY |
|--|------------------------|-----------------------|-----------------|------------------|
| Milking time desired (hr./day)                           | 4                      | 6                     | 6               | 21               |
| Milking center throughput (cows/hr.)                     | 25                     | 25                    | 45              | 100              |
| Herd size that can be accommodated by the milking center | 58                     | 88                    | 158             | 823              |
| Milking center investment required                       | —                      | \$30,000              | \$50,000        | \$900,000        |
| Total investment required for facility and cows          | —                      | \$78,000              | \$368,000       | \$2,947,000      |
| Labor efficiency, cows/worker                            | 30                     | 30                    | 50              | 60               |
| Workers needed   | 2.0                    | 3.0                   | 3.2             | 13.8             |
| Net annual farm income                                   | \$41,956               | \$40,235              | \$64,922        | \$252,999        |
| Return on equity capital per year                        | \$1,956                | \$235                 | \$24,922        | \$212,999        |
| Initial equity capital                                   | \$300,000              | \$300,000             | \$300,000       | \$1,500,000      |
| Asset turnover ratio                                     | 55%                    | 69%                   | 77%             | 67%              |
| Debt/asset ratio   | 0%                     | 21%                   | 62%             | 77%              |
| Percentage return on equity capital (ROE)                | 0.7%                   | 0.1%                  | 8.3%            | 14.2%            |

## MINNESOTA DAIRY LEADERS ROUNDTABLE

In 1992, dairy farmers, and CEOs of 32 dairy related businesses and organizations made a formal commitment to revitalize Minnesota's dairy industry by forming a structure to unite their effort. That structure is the Dairy Leaders Roundtable. This newsletter highlights Roundtable accomplishments as well as on-going projects and plans.



### What does the dairy industry need to grow?

*Representatives from key sectors of the Minnesota dairy industry answer that question.*

**M**innesota dairy industry leaders answered one of the toughest questions facing the state's leading agricultural industry.

Four panelists offered their views on how the dairy industry can survive and grow, against a backdrop of shrinking national marketshare. The panel discussion was part of the Minnesota Dairy Leaders Roundtable meeting held Nov. 28 in Minneapolis, Minn. The panelists included a producer, processor, state senator and recent college graduate.

#### **Producer**

Greg Jans, a dairy producer who milks 600 cows near Grove City, Minn., said producers

aren't leaving the business because they don't like the lifestyle it affords. "They're leaving because of the 'bottom line,'" he said.

But Jans admits there isn't a one-size-fits-all answer when determining how to improve dairy farm income.

#### **Processor**

Mark Davis said, "We're running out of players in the dairy industry." The owner of Davisco, a dairy processing company, said few are willing to invest in the state's dairy infrastructure. "This should be where the cows are milked," he

said, pointing to the ideal land, climate and geographic location.

#### **State Senator**

Minnesota State Senator Steve Dille (R-Cokato) said there are three things the legislature can do to help the state's dairy industry.

First, it can provide the educational opportunities producers need to improve herd management. Second, the state can help control diseases through such resources as state laboratories. Finally, Minnesota can provide dollars to help producers enter the dairy industry and upgrade existing facilities.

#### **College Graduate**

Virginia Mold encouraged pro-



Greg Jans, Dairy Producer



Mark Davis, Dairy Processor



State Sen. Steve Dille

## Those involved in GEIS process are disappointed

Harold Stanislawski is disappointed with a three-year, \$3 million study of Minnesota's animal agriculture.

Stanislawski, who works for the Minnesota Department of Agriculture, and other industry leaders who worked closely with the study reviewed the process and outcomes at the Minnesota Dairy Leaders Roundtable meeting held in Minneapolis. Joining Stanislawski in the review were Tim Tracy of AgStar Financial Services; Gary Allen, a dairy producer from Eyota, Minn.; Andy Steensma, former director of legislative services, Minnesota Farmers Union; and F. Abel Ponce de León, head of the Department of Animal Science, University of Minnesota.

Known as the Generic Environmental Impact Statement of animal agriculture in Minnesota (GEIS), the study resulted in 76 recommendations.

"There are a lot of people disappointed in three years of work, myself included. The expectation was so high it could not be met," said Stanislawski.

The study was led by a 25-

member Citizen Advisory Committee (CAC) that was appointed by the Environmental Quality Board (EQB).

The need for a GEIS study grew from controversy surrounding Minnesota feedlots during the 1990s. Funded by the 1998 Minnesota legislature, the study was seen as a way to provide a full public examination of the critical environmental, economic and social factors of animal agriculture. The study was designed to provide a public examination while developing policy recommendations that decision-makers could use.

Allen, a member of the CAC and the only dairy producer on the Roundtable panel, said, "The recommendations are generalized and very national in scope." He said the state's feedlot regulations have already dealt with many of the same issues.

Tracy, who also served on the CAC, said the recommendations must become more focused to be useful.

He said it was difficult for the 25-member group to

develop recommendations because many were uninformed about farming. "There was no movement at all about the importance of animal ag in the state," he said. "Part of the group just doesn't believe that to be the case."

"What has to take place pretty darn quick is to get an environment in this state where people want to invest capital in this industry," he said. "We need a climate where rules are laid out and set for people who want to stay in the industry in the state."

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### Grow

*continued from page 1*

ducers and processors to offer internships and networking opportunities to those wanting to encourage young dairy enthusiasts. As the student representative to the Minnesota Dairy Leaders Roundtable, Mold offered a college graduate's perspective.

### Closing Comments

"I would rather see the dairy industry here than the Twins," Jans said in his closing comments.

"Most of this country's people are a lot closer to Minnesota than Idaho," Davis said, noting Idaho's growing dairy market-share. "We have a lot of advantages here."

Mold said there are young people who want to enter the dairy industry.

Dille said industry players must work to foster a state environment where producers want to milk cows. "Get involved in township and county elections," he said. "The folks on those boards directly impact whether dairies can be expanded or built in a given area."

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## MinnLink Update [www.minnlink.org](http://www.minnlink.org)

MinnLink, a Web site for Minnesota dairy producers and providers, has a link to [www.MNDairy.net](http://www.MNDairy.net) that offers a free web-based graphing tool called "Graph It." Simply enter the title, dates and the data you want to view. The graph can then be printed by clicking the "print" button on the browser. Minnesota dairy producers can use graphs to coordinate activities with family members, employees and technical advisors, resulting in increased efficiency and profits. Dairy producers use graphs to chart feed usage, dry matter intake, milk production, somatic cell count (SCC) and income over feed costs. The MinnLink Web site is supported by the Minnesota Dairy Leaders Roundtable, Midwest Dairy Association and the Central Minnesota Dairy Advisory Program.

## Industry taking proactive steps to secure dairy confidence

What if? That's the question national dairy checkoff leaders started asking in 2001 when animal-health issues in Europe became worldwide news stories.

It's the question Sherry Newell of the Midwest Dairy Association (MDA) posed at the December meeting of the Minnesota Dairy Leaders Roundtable. The Roundtable serves as both a sounding board and advisory group for a campaign Newell and others developed to address the "What if?" question.

What if Foot and Mouth Disease reached the United States for the first time in over 70 years? What if BSE would be confirmed within an American livestock population? What if these news stories from Europe adversely affected demand for dairy products in the United States?

Those questions triggered discussions among industry groups and prompted the formation of the Dairy Management Inc.-coordinated Dairy Confidence Campaign. The campaign was created to help preserve the reputation of, and confidence in, dairy products and producers in an environment of growing misinformation and consumer skepticism.

The campaign brings together four major components: the fledgling national dairy image and reputation management plan, issues management, the new crisis preparedness planning and the proposed messenger networks. Three of the four components fit with or extend initiatives in Minnesota led by the MDA.

### Reputation Management

The reputation management efforts in Minnesota are well ahead of the national plans, Newell said. Last September the MDA launched an electronic news update for people connected to the dairy industry.

In addition, the National Dairy Council started a monthly one-page Dairy Dialogue that is delivered by e-mail.

In 2001, MDA created a consumer communications team. Seven professionals are working at building relationships with major-market media contacts and other key leaders.

### Issues Management

MDA also continues to monitor the activities of special-interest groups as part of the issues management component.

### Crisis Preparedness

In the area of crisis preparedness, the MDA has completed its first comprehensive crisis communication manual. Two MDA staff members—Kevin Stiles, vice president of industry relations and marketing,

and Bob Otterson, consumer public relations manager—hold seats on the national Think Tank that advises the DMI crisis planning. Tactics scheduled for 2002 that will support Dairy Confidence and existing reputation management efforts in Minnesota include:

- Promotion of National Dairy Council Web site and resources on food safety;
- Expanding national farmer spokesperson network;
- Continued refinement and recruitment of third-party experts;
- Continued monitoring of special-interest groups and other issues that could affect demand for dairy products.

*Anyone with questions on the reputation management efforts led by Midwest Dairy Association or the Dairy Confidence Campaign should contact Bob Otterson at the association office in St. Paul. His direct line is (651) 487-4772, and his e-mail address is [botter-son@midwestdairy.com](mailto:botter-son@midwestdairy.com).*

## Legislators question, listen

*State Rep. Howard Swenson (R-Nicollet), right, poses a question to Kurt Markham, director of ag marketing services for the Minnesota Department of Agriculture. Swenson and State Rep. Mike Osskopp (R-Lake City), left, participated in a hearing the Minnesota House Agriculture Committee held immediately after the Nov. 28 meeting of the Minnesota Dairy Leaders Roundtable.*



# Calendar of Events

Educational opportunities open to all producers and other professionals in the dairy industry

## MARCH

- 1 MN DHIA SE District Meeting. Branding Iron, Preston, MN. All members are welcome. Contact: MN DHIA 1-800-827-3442.
- 4 MN DHIA NW District Meeting. Shooting Star Casino, Mahanomen, MN. All members are welcome. Contact: MN DHIA 1-800-827-3442.
- 5 MN DHIA South Central District Meeting. Diggers, Kasson, MN. All members are welcome. Contact: MN DHIA 1-800-827-3442.
- 5 Labor Management Class. Melrose, MN. Contact: Pat Kearney 320-231-7890 or 1-800-738-1485.
- 7 Livestock & Poultry Odor Workshop I: Intro to Odor Emissions, Measurement, Dispersion & Control. Cabela's, Owatonna, MN. Contacts: David Schmidt 612-625-4262; Barbara Oliver 612-625-7024.
- 8 Livestock & Poultry Odor Workshop II: Technical Training on OFFSET, Biofilters, Anaerobic Digestion & Odor Mgmt. Plans. Cabela's, Owatonna, MN. Contacts: David Schmidt 612-625-4262; Barbara Oliver 612-625-7024.
- 8&9 MN Joint Dairy Breeds Convention. Holiday Inn, Owatonna, MN. Contact: Larry Tande 507-835-3622
- 11 MN DHIA NE District Meeting. Embers, Milaca, MN. All members are welcome. Contact: MN DHIA 1-800-827-3442.
- 12 MN DHIA West Central District Meeting. Pizza Ranch, Glenwood, MN. All members are welcome. Contact: MN DHIA 1-800-827-3442.
- 13&14 Tri-State NW Dairy Shortcourse. DoubleTree Hotel, Boise, ID. Contact: Washington State University Conferences 253-445-4575.
- 14 MN DHIA Barron-Washburn District & Annual Meeting. Courthouse, Barron, WI. All members are welcome. Contact: MN DHIA 1-800-827-3442.
- 14&21 Dairy Price Risk Management Education. Fillmore Co. Ext. Office, Preston, MN. Contact: Neil Broadwater 507-457-6440.
- 15&22 Dairy Price Risk Management Education. Loon Restaurant, Lewiston, MN. Contact: Neil Broadwater 507-457-6440.
- 21 MN Dairy Leaders Roundtable Meeting (in conjunction with MMPA Annual Meeting). Holiday Inn, St. Cloud, MN. Contact: Ed Frederick 507-835-3422.
- 21&22 MMPA Annual Meeting. Holiday Inn, St. Cloud, MN. Contact: Ann Rolfes, 320-203-8336.
- 21-23 Dairy Calf & Heifer Conference. Wyndham Inner Harbor, Baltimore, MD. Contact: PDHGA Headquarters 877-434-3377.
- 26 MN DHIA Annual Meeting. Buffalo, MN. All members are welcome. Contact: MN DHIA 1-800-827-3442.
- 26 Labor Management Workshop: Training & Motivation. Southern ROC, U of MN, Waseca, MN. Contact: Pat Kearney 320-231-7893.

## APRIL 2002

- 4 2002 MN-WI Dairy Policy Conference. Holiday Inn Convention Center, Eau Claire, WI. Contact: Lori Weaver 608-258-4414.
- 5 Dairy Directors Leadership Conference. Holiday Inn Convention Center, Eau Claire, WI. Contact: Lori Weaver 608-258-4414.

## STATE DEVELOPING BIOSECURITY PLAN

**A** newly-formed task force is developing a statewide dairy biosecurity plan. The biosecurity task force of the Minnesota Dairy Leaders Roundtable, led by steering committee member Jim Ridgeway, outlined the steps it's taking to develop the plan at the winter meeting of the Minnesota Dairy Leaders Roundtable.

The first step the group is taking is to survey processors, feed companies and auction markets about their biosecurity protocol, said Dr. Bill Hartmann of the Minnesota Board of Animal Health.

The task force and the Minnesota Veterinary Medical Association will then develop a set of best management practices for veterinarians to follow when visiting farms. Hartmann said dairy producers should also develop a biosecurity program for their own farms.

## STATE GRANTS AVAILABLE FOR DAIRY BUSINESS PLANS

**M**innesota's fledgling Dairy Business Grant Program is once again open and ready for business.

The program had been in a holding pattern while the state evaluated its current budget shortfall, said David Weinand, project consultant with the Minnesota Department of Agriculture. About half of the program's original \$200,000 funding is still available.

The grants can help pay for half of the cost of a comprehensive business plan that evaluates farm start-up, modernization and expansion. The grants are capped at \$5,000 per farm. Weinand said the grants are not to be used to purchase assets such as equipment or cattle.

## MINNESOTA DAIRY LEADERS ROUNDTABLE

MISSION: "To develop and implement a shared vision of the Minnesota dairy sector through strengthening its competitiveness, profitability and social vitality."

### 2001 STEERING COMMITTEE:

Bill Dropik, *Minnesota Milk Producers Association*

Paul Kent, *Land O'Lakes*

Jim Ridgeway, *Professional Dairy Producers of Minnesota*

Dave Scheevel, *Foremost Farms*

Clint Fall, *First District Association*

Mark Davis, *Davisco*

Mark Furth, *Associated Milk Producers, Inc.*

Ray Cherry, *Land O'Lakes*

Dave Daeges, *Minnesota Bankers Association*

Dan Little, *Minnesota Veterinary Medical Association*

Doris Mald, *Rural Women Organizations*

Gene Hugoson, *Minnesota Department of Agriculture*

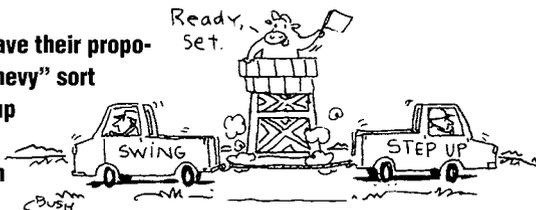
F. Abel Ponce de León, *University of Minnesota*

Ed Frederick, *MDLR Facilitator, Southern Research and Outreach Center, 12298 350th Ave., Waseca, MN 56093-5160 Phone 507-835-3422*



## Ford vs. Chevy

Swing parlor or step-up? Both have their proponents. Maybe it's a "Ford-vs.-Chevy" sort of personal preference. A step-up parlor with front exiting gates can speed milking because each cow can leave and be replaced without waiting for the rest of the group to finish. It is important for workers in a step-up parlor to be comfortable around cows, however. A nervous worker can make the cows reluctant to walk past. In a swing parlor, workers are separated from the cows, but cows must enter and leave together, so slow-milking cows can put a wrench in the works.



lb./cow/year, a \$13.00/cwt. milk price, \$6.50/cwt. for feed and other direct expenses, \$1,500/year for repairs and maintenance, and \$10,000 in overhead expenses on the existing dairy. If we assume the two operators could earn \$40,000 elsewhere, the net farm income of \$41,956 leaves only \$1,956 as a return on their equity capital invested in the dairy. With a farm net worth of \$300,000 and no debt, their return on equity (ROE) is only 0.7%—less than they could make if their equity were earning money in the bank instead.

The second column shows the finances for an expanded tie-stall barn. Factoring in the cost of the remodeling and cows (\$78,000), wages (\$25,000), debt payments, and other expenses, the income nets out very close to where it was without the expansion.

The third column depicts a retrofit parlor. This alternative is projected to earn 8.3% ROE over and above the \$40,000 labor and management opportunity cost.

Overhead expenses might be higher than the \$10,000 assumed here if the farm has significant existing debt before the expansion. Interest on term debt is an overhead expense. Higher overhead expenses would reduce the ROE and make an expansion more difficult to cash flow.

The final column shows a larger, all-new facility. An all-new facility would likely require a significantly larger initial capital base than the \$300,000 net worth and zero debt we assumed for the other

three scenarios. Even starting with a \$1.5 million net worth, adding almost \$3 million in debt for the all-new facility and cows and factoring in a facility resale value somewhat less than the construction cost brings the debt/asset ratio for the scenario up to 77%. Assuming three-times-per-day milking (21 hours/day), a production level of 24,000 lb./cow/year, and \$6.35 for feed and other direct expenses, ROE is 14.2%. A bigger ROE sounds better. But there's a down side. We increased ROE partly by increasing the debt/asset ratio. The higher debt payments could spell cash flow trouble if milk prices drop.

### The Bottom Line

The trend in the dairy industry seems to be in the direction of herds of 500 to 1,000 cows or more. The increase in ROE and net farm income that expansion can offer can be quite attractive. However, a more gradual expansion can also offer attractive returns, and may be an appropriate choice if you don't have the equity to leverage a new facility, don't want to take on the risk involved with a loan of the size that all-new facilities would require, or don't care for the noneconomic implications (e.g., lifestyle changes) that a major expansion brings.

*Editor's note: For a more detailed description of this analysis, including assumptions made for the various alternatives, contact the author at 612/625-8150, wlazarus@umn.edu, or see [www.apec.umn.edu/faculty/wlazarus](http://www.apec.umn.edu/faculty/wlazarus).*

## Polytechnic Dairy Education at UMC

By LYLE E. WESTROM  
University of Minnesota, Crookston

Students who major in Animal Industries Management at the University of Minnesota, Crookston, learn both the "hows" and the "whys" of strategic and operational management in the dairy industry. UMC provides a polytechnic education, a type of education that combines theory (why) with experience (how). The dairy industry leaders who serve on the advisory committee play a major role in shaping our education at UMC to keep us in touch with the changing dairy world.

Students majoring in Animal Industries Management with a dairy emphasis have access to the Northwest Research and Outreach Center dairy herd housed in a 106-stall dairy barn with a modern parlor. Judging classes, tours, Dairy Club trips, and a major consulting project allow students to visit an additional 20 to 40 small and large dairy farms while completing their B.S. degrees at UMC. An education that emphasizes problem solving, teamwork, and communication skills, and provides an internship experience anywhere in the world, makes students highly recruited by employers upon graduation.

For information about the program please contact Lyle E. Westrom at 218/281-8110, lwestrom@mail.crk.umn.edu or Harouna Maiga at 218/281-8107, hmaiga@mail.crk.umn.edu.

# Squeaky Clean at the Scherbring Heifer Hotel

Here's how one family is making biosecurity part of its specialized enterprise.

Research has shown that in the Midwest, heifers raised on specialized units had lower rearing costs and more consistently met goals for optimal growth and age at first calving than those grown on dairy operations.

By HUGH CHESTER-JONES  
Southern Research and Outreach Center  
University of Minnesota, Waseca

With demand for high-quality heifers at an all-time high, heifer raising is emerging as a self-supporting enterprise in Minnesota. Because they move calves and heifers among multiple farm sites, such enterprises require special attention to biosecurity—the prevention of disease transmission.

A successful biosecurity plan reduces risk of disease transmission by identifying and modifying the riskiest parts of the operation. Here's how Minnesota City heifer growers Ron and Marianne Scherbring have improved biosecurity at the Heifer Hotel, a specialized heifer growing facility.

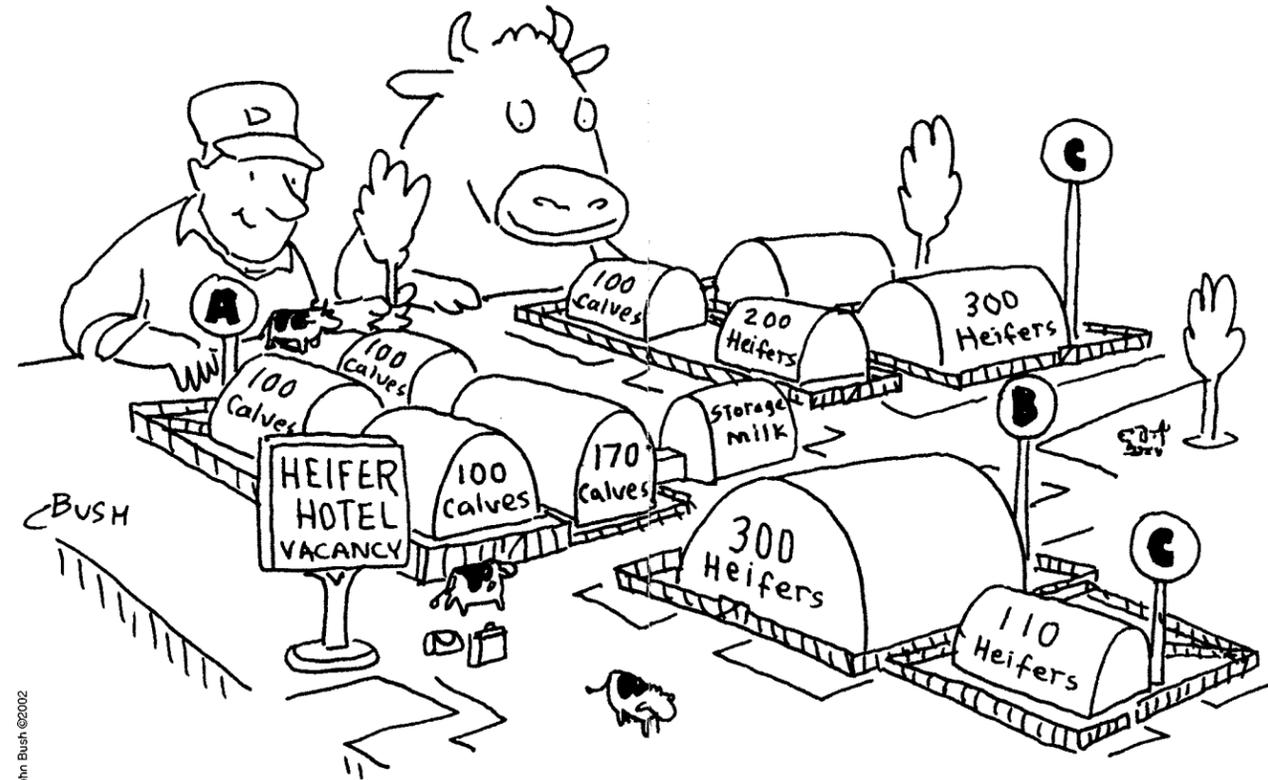
## Background

Scherbrings opened the Heifer Hotel in the early 1990s. They housed more than 1,000 dairy heifer replacements from 2 days to more than 10 months old on their former dairy farm site and also operated another site with 200 to 300 pre- and early post-weaned heifers. The system included four phases. Phase 1 was four facilities for 400 individually fed calves in 4-foot by 4-foot pens with removable solid panels on three sides (two greenhouses, one hoop barn, one renovated machinery shed). Phase 2 consisted of group weaning transition pens, and phase 3 consisted of freestall barns for larger TMR-fed groups. In phase 4, heifers used a bedded manure pack barn and loafing area.

The system had an all-in, all-out policy for phase 1; calf groups of 20 to 30 in phase 2; and groups of up to 100 heifers in the final phases. A central building was used for power washing the panels for phase 1. Manure was scraped into two lagoon storage areas for the other phases.

## Time for Change

Things changed in fall 2001. The Scherbrings had been approached to take on new clients. To meet the added demand they would need space for 2,200 head. They knew they had environmental compli-



John Bush ©2002

ance limitations. They were satisfied with their existing biosecurity but had identified some critical points that would have to be addressed to increase their capacity. They also wanted to maintain the same labor force of five employees for the expanded operation.

The Scherbrings demolished the old dairy barn, upright silos, and pig barn. In their place is a new barn for 180 individually fed calves, increasing phase 1 capacity to 580 head (see cartoon). A 300-head curtain-sided transition barn replaced the old dairy cow shelter and loafing area. The original freestall barns remain. A crushed-rock lane circling the farm allows access to all buildings.

## Biosecurity

Biosecurity and health begin with animal husbandry and comfort. The Scherbrings always ask, "What can we do to optimize animal comfort and health to support the growth goals that our clients expect?" Their general philosophy is all-in, all-out for phase 1. Sick calves are isolated when appropriate. In all phases they emphasize daily animal observations, clean and dry bedding, clean alleys, clean water, and consistent, high-quality feed. One skid loader is used exclusively for manure scraping. A trailer is dedicated for moving calves from individual to group pens.

Key points of the Scherbrings' biosecurity protocol include:

- Good communication with dairy clients and employees is critical.
- Dairy clients are required to ensure optimum passive colostral immunity transfer and maintain sound disease-prevention protocols for pre-fresh cows and maternity pen management.

### PHASE 1—(ISOLATED MANAGEMENT AREA A IN CARTOON):

- Calves are delivered in groups of six to eight calves three to four times a week. Calves from different farms are kept separate. The hauling truck is washed between calf groups and disinfected weekly. Calves are unloaded at one check-point only (see cartoon).
- Calves from each dairy are kept separated for 30 days. A separate wash facility is used for power-washing panels between calf groups. Pens are scraped clean with a skid loader and rebedded. A new power wash and milk mixing area was added in the upgrade; waste water is channeled underground through a pumping station to a central lagoon.
- Employees follow specific protocols for checking serum proteins and taking temperatures of calves upon arrival and during the pre-weaned period.

- Calves are screened to see if they carry BVD or other diseases. Calves are weighed periodically.
- The health program, established with the veterinarian, is adjusted based on calf autopsies. With the additional animals, the Scherbrings can afford the extra effort and expense of continuously refining their health program.
- Each calf is given precise amounts of milk replacer at each feeding.
- All routine chores are conducted in the same sequence daily. Calves are bedded on schedule. A precise amount of bedding is distributed using a hitch-mounted container with a distribution auger.

### PHASE 2—(ISOLATED MANAGEMENT AREA B IN CARTOON):

- All new facilities have staff access doors inside each management area. No access doors on outside of buildings are open to the public.
- Group sizes reflect the number of calves in the all-in, all-out rotation from individual pens. Transition groups of 30 to 40 calves keep the flow of heifers through the system. Excellent staff husbandry skills make this possible (smaller groups are usually recommended). Calves remain here for one to two months.

### PHASE 3—(ISOLATED MANAGEMENT AREA C IN CARTOON):

- A limited number of self-locking gates are used for working heifers. Stalls are rebedded weekly; alleys are scraped daily into a common lagoon storage.
- For phases 2 and 3, the new perimeter lane (see cartoon) allows the feed truck to distribute TMR in a consistent sequence from younger transition to older heifer group pens. A direct access alley link can be set up to move heifers to the freestall barns.
- The new access lane allows heifers from the off-farm site to be moved directly into Area C housing on this site.

The Scherbrings have just been accredited as a five-star heifer-raising operation for Best Management Practices by the Professional Dairy Heifer Growers Association (PDHGA).

Editor's note: For more information on growing heifers, see [www.pdhga.org](http://www.pdhga.org).

## Why specialize?

THE SCHERBRINGS began their vision when they realized their milking operation would not support extended family members and they did not have space to expand their dairy. At the same time, changes in dairy farming created demand for specialized heifer growers. So the Scherbrings decided to try the heifer-raising business. They worked through a management plan with goals to determine how many heifers they needed to cash flow the operation with some new facilities. By specializing, they have been able to build heifer-raising skills beyond those of the traditional dairy farm operator. The ability to handle large numbers of heifers allows for precise management of feed and bedding to improve the economic efficiency of the enterprise.

# The Tale of Two Heifer-Raising Systems

*Feedlot and management intensive grazing go head to head*

By MARGOT RUDSTROM  
West Central Research and Outreach Center  
University of Minnesota, Morris

**R**oger Imdieke, a custom heifer grower in west-central Minnesota, wanted to know whether growing dairy heifers on pasture would result in adequate gains and be cost effective relative to raising heifers in a feedlot. In spring 2000 University of Minnesota researchers set up an experiment on his farm. Dairy heifers that averaged about 480 pounds were divided into four groups of 36. Two groups were put into the feedlot and two were put onto alfalfa pasture for 145 days, from May 13 through October 5.

The feedlot heifers were fed a TMR diet. The heifers on pasture were rotationally grazed and received some supplementation. Feed and labor were monitored for both systems.

Rates of gain were similar for both systems. The feedlot heifers had an average daily gain (ADG) of 2.00 pounds per head while the pasture heifers had an ADG of 2.04. Two heifers were lost on pasture.

Table 1 shows the costs associated with each system over the 145-day trial. The biggest differences are in feed costs (cost of feed ingredients), machinery costs, and labor. Even if the cost of the fencing and a pasture charge are added to the feed cost for the pasture system, feed costs are still lower than for the feedlot. Labor also cost far less for the pasture system.

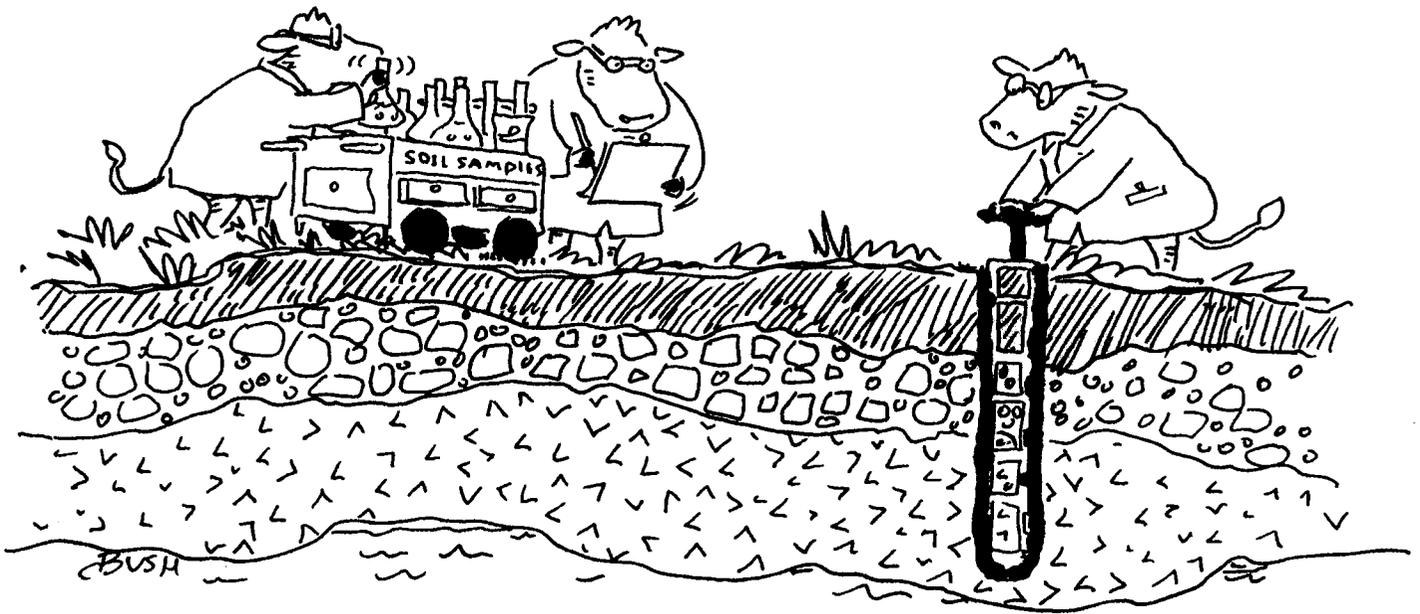


The results shown here are for the first year of the trial. The experiment was repeated in 2001. Preliminary re-

sults for 2001 indicate again, no significant differences in ADG between feedlot and pasture heifers. 🐄

Table 1: Feedlot and Management-Intensive Grazing Pasture Cost Comparisons

|                         | FEEDLOT       |             | PASTURE      |             |
|-------------------------|---------------|-------------|--------------|-------------|
|                         | Total \$      | \$/head/day | Total \$     | \$/head/day |
| Feed cost               | 7,636         | 0.73        | 2,805        | 0.28        |
| Labor (\$15/hour)       | 2,675         | 0.26        | 816          | 0.08        |
| Machinery               | 3,430         | 0.33        | 1,296        | 0.13        |
| Health costs            | 360           | 0.03        | 432          | 0.04        |
| Facilities              | 1,000         | 0.10        |              |             |
| Bedding                 | 731           | 0.07        |              |             |
| Fencing, bunkers, water |               |             | 811          | 0.08        |
| Pasture charge          |               |             | 1,912        | 0.19        |
| Death loss              |               |             | 1,550        | 0.15        |
| <b>Total cost</b>       | <b>15,832</b> | <b>1.52</b> | <b>9,622</b> | <b>0.95</b> |
| Manure credit           | 360           | 0.03        |              |             |
| <b>Net cost</b>         | <b>15,472</b> | <b>1.49</b> |              |             |



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## Dirt Feedlots and Groundwater

By JUN ZHU

Department of Biosystems and Agricultural Engineering  
University of Minnesota

**M**any Minnesota dairy farms maintain cows on a combination of pasture and dirt feedlot. Are such feedlots a potential source of contamination for groundwater? A just-completed study suggests that even after 100 years, few pollutants leach more than four feet into the soil. In addition, potential groundwater contamination can be minimized by replacing the top layer of soil every 20 years or so.

The research, funded by the Minnesota Department of Agriculture and carried out by the researchers in the University of Minnesota Biosystems and Agricultural Engineering Department and the Southern Research and Outreach Center, investigated 10 randomly selected dairy dirt feedlots in southern Minnesota with ages ranging from 20 to more than 100 years. Seven of the sites were built on loam soil, two were on sandy loam soil, and one was on clay loam soil. Several five-foot-deep soil samples were taken from each feedlot and from the surrounding area. Here's what they found:

**Soil pH.** Soil pH ranged from 7.0 to 8.5. It was usually higher in the top foot than in the second foot.

**Phosphorus.** No significant increases in soil phosphorus were seen more than four feet below ground at any site, regardless of age or soil type. This suggests that dirt feedlots are unlikely to lead to acute phosphorus pollution problems to groundwater as long as the water table is below four feet.

**Ammonium Nitrogen.** For loam soil, ammonium nitrogen concentration was not affected three feet below ground at sites 60 years old or less. The 100-year site showed much higher ammonium nitrogen concentration in all depths. Thus, if the water table is three feet below the surface, loam soil feedlots less than 60 years old may not pose a threat to the groundwater quality, but older feedlots might.

Sandy loam soil showed a potential leaching problem for ammonium nitrogen. However, the seepage seemed to be retarded on sites older than 30 years, perhaps due to the clogging of pores and channels between the sand soil particles.

In the clay loam feedlot, no increase in ammonium nitrogen was found below three feet. Since only one such site was sampled, however, we need to look at more sites before making any reliable conclusions.

**Nitrate Nitrogen.** In all three soil types, older sites appeared to have a bigger potential for nitrate nitrogen pollution than the younger sites. The biggest increase in nitrate nitrogen concentrations were found in the top foot. Replacing the topsoil layer every 20 years could reduce the buildup of nitrate nitrogen in the topsoil as well as the downward movement of nitrate nitrogen due to saturation of the top layer.

In summary, it appears that phosphorus seepage is not a concern as long as the water table is four feet below the surface. Nitrogen seepage has to be considered cautiously on a case-by-case basis. Replacing the top foot of soil every 20 years can minimize the risk of groundwater pollution by ammonium and nitrate nitrogen. 🐄



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**And the Winner Is . . .**

Thanks to all who submitted entries to our cartoon caption writing contest. The top four winners:

**"Will this be a moooving violation?"**

Anonymous  
(postmark Fargo, N.D.)

**"It's not my fault, he told me to step on it, it's milking time."**

LeRoy Ritter (Avon, Minn.)

**"My license tabs may not be current, but my vaccinations are!"**

Art Madsen  
(Northfield, Minn.)

**"Since I'm the boss, I drive."**

Calvin Martin  
(Pillager, Minn.)



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**DAIRY** *Initiatives*

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