

Initiatives

N E W S L E T T E R, UNIVERSITY OF MINNESOTA EDITION

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Are There Futures in Your Future?

They can help you manage your budget—but not without risk

You hear them on the farm report every morning—the latest prices being traded for futures in corn, Grade A milk, and other commodities. What are these futures? Do they have a part to play in your farm management picture?

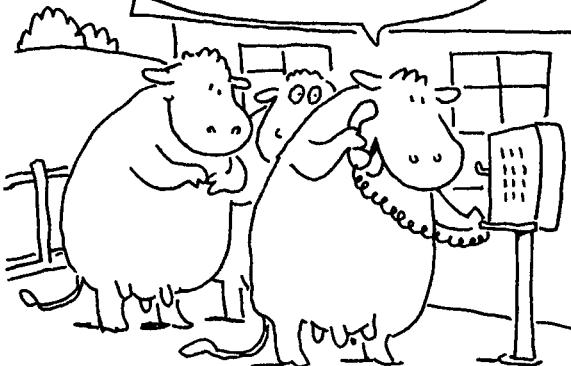
Maybe, says extension agricultural economist Jerry Hammond. Futures can help reduce uncertainty caused by changes in the prices of things you buy and sell. But they're not for everyone. Here's some information to help you decide whether futures might be appropriate for you.

Why Trade Futures?

As a dairy producer, you buy corn and other commodities that change in price over time. You also sell a product—milk—with fluctuating prices. These “moving targets” can make it hard to manage purchases and sales for maximum profitability. Futures can help you by making income and expenses less uncertain by evening out the hills and valleys of

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Hello,
1-800 Psychic?
I want to
know all about
commodity
futures.



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Midwest Dairy Management Conference

August 28-29, 1996

MINNEAPOLIS CONVENTION CENTER

Join dairy industry leaders in two days of information-packed sessions for producers and others who wish to stay ahead in today's fast-changing world of dairy production. Numerous topics will be addressed in four areas: The Dairy Industry in the 21st Century; Managing Forages, Dairy Manure, and Dairy Nutrients; Herd and Cow Management; and Business Management.

The registration fee of \$149 includes conference proceedings, refreshments, two noon lunches, and two continental breakfasts. Register in advance or at the door.

Contact Gerald Wagner at 800-367-5363 or 612-625-1214 for further information.

This archival publication may not reflect current scientific knowledge or recommendations.
Current information available from University of Minnesota Extension: <http://www.extension.umn.edu>.

Grade A

Milk

Futures

New Kid on the Block

FUTURES ON commodities such as corn and soybean meal have been around for a long while. But because of built-in stability due to federal supports, until recently there was no need for milk futures. Thanks to the drop in guaranteed prices, however, this past year markets began trading futures for Grade A milk.

Milk futures can help you reduce uncertainties in income. However, the same warnings that apply to trading on other commodities also apply to milk.

More information about trading milk futures is available in *Futures Contracts for Milk: How Will They Work?* by Ed Jesse and Bob Cropp of the University of Wisconsin. To obtain a copy, call 608-262-9483 and ask for publication #54.

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Summer 1996

Futures

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your financial picture. They may not get you the highest price for your product. They may not let you pay the lowest price for things you need to buy. However, they will allow you to lock in a price you consider reasonable and then more or less stick with it.

"Futures give you the potential to put a floor under the price you get for something you sell or a ceiling on the price you pay for something," Hammond says.

How Futures Work

As a dairy farmer, you can "hedge" (reduce the uncertainty in commodity prices) by buying futures for things you plan to buy (e.g., soybean meal) or by selling futures for things you plan to sell (e.g., milk). The following example describes how you might use futures to add predictability to the price you get for milk. Keep in mind that you can also apply the same principles (in the opposite direction) to commodity purchases.

Say it's August and you think the price of Grade A milk is going to drop by winter. If the April Grade A milk futures are at a price you're willing to accept, you hedge by selling enough futures to cover the amount of milk you plan to sell in April.

Now, here's the tricky part. You usually don't actually deliver on that future. Rather, before April arrives, you sell your milk to your dairy at the going price, and you offset (cancel) your futures position by buying April Grade A milk futures at the current market price.

In the meantime, the price of Grade A milk has probably either increased or decreased.

If the price of milk has gone down as you anticipated, the value of the futures probably also dropped. That means you buy futures for less than you sold them in August. The resulting monetary gain offsets the lower price you get for your milk at the dairy, bringing the net benefit to you up to or near the price you thought reasonable in August.

But what if the price of Grade A milk has risen? In that case you sell the milk at a higher price than you had anticipated. But the price of the futures is likely to have risen by a similar amount, so when you cancel your position in the futures market by buying Grade A milk futures, you probably incur a loss on the futures transaction. The loss offsets some of your gain on the increased milk price.

However, the combined effect of your gain on the commodities market and your loss on the futures market will probably balance out so that once again you end up making approximately the amount of money you were willing to settle for in August. This illustrates the major feature of hedging: You essentially lock in an acceptable price. When prices move in your favor on the commodities market, your net gain is not as great as if you'd stayed out of futures entirely—but you have the benefit of having protected yourself against fluctuations in the other direction.

The Down Side

Nothing in life is free, and futures are no exception. The price you pay for the privilege of reducing your financial uncertainty includes:

- **Commission.** You pay a broker to trade the futures for you.
- **Potential Loss of Profit.** If you sold milk futures at a price you considered acceptable and the price of milk futures later rises, you end up behind for your efforts rather than ahead by the amount of the price change. It's only when commodity prices move opposite to what you'd hope for on the cash market that hedging will boost your bottom line.
- **Initial Margin Requirement.** When you buy or sell a future, that gives you an "open position" in the market. You are subject to a "margin requirement," which means you have to deposit a certain amount of money with the futures exchange. You temporarily lose the use of that money for other purposes, including earning interest elsewhere.
- **Margin Calls.** If the price of the future moves against you, you have to deposit additional money with the exchange to maintain the margin requirement.
- **Need to Buy Commodity.** If you sell a milk futures contract to hedge against falling prices but the price of milk and milk futures rises instead, you may find you're unable to buy back milk futures and have to deliver on the contract. You may have to buy milk at an exorbitant price in order to do so.
- **Stress.** Futures, if used prudently, reduce stress. But if you find trading futures make you more stressed, they may not be for you. Consider following this rule of thumb: If trading futures distracts you unduly from your other tasks as farm

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The Farm Bill and You



If you watched the 1996 farm bill work its way through Congress, you know it was a tough battle for midwestern dairy interests. When the final bill passed in April, it contained some good news, some bad news, and a lot of uncertainties.

"The general message is that Congress moved the debate to the USDA and we're now preparing to make our voice heard to USDA secretary Dan Glickman," says Dirk Haire, agricultural policy director with the Minnesota Department of Agriculture. "In keeping with this strategy, [department] commissioner Gene Hugoson and deputy commissioner Bill Oemichen, at U.S. Senator Rod Grams' invitation, met with Secretary Glickman [in May] to discuss dairy issues. Secretary Glickman agreed the Federal Milk Marketing Order system unfairly discriminates against the midwest[ern] dairy industry and should be changed to reduce or eliminate the Class I pricing differences between regions."

Here's a summary of the main points of the dairy provisions, with the Minnesota Department of Agriculture's interpretation of how they might affect your operation:

Budget Assessment. The law drops the assessment laid on dairy farmers by the 1990 farm bill to help reduce the federal deficit. This is probably the best near-term news Minnesota dairy producers got out of the legislation, Haire says, because it's a direct boost in the price you're paid for milk.

Changing Federal Orders. The Federal Milk Marketing Order system, which sets the minimum price dairy farmers get paid for their milk in different parts of the country, is notoriously skewed against midwestern producers. Though the 1996 farm bill doesn't immediately resolve the unfairness, it does offer hope, according to Haire.

First, it tells USDA to merge the regional orders from the current 33 to not more than 14 or fewer than 10 by April 1999. Because this will provide a bigger base from which to calculate the utilization rate (proportion of milk used for fluid milk) for the Upper Midwest, it could improve the overall price paid to Minnesota farmers.

Second, it encourages USDA to look at changing the Class I pricing structure. Based on assumptions from the 1930s about our ability to ship milk, the current structure puts midwestern milk at a significant minimum pricing disadvantage. Whether it actually changes is up to USDA. Don't look for an impact on your bottom line any time soon. The likely time frame for a substantial change is 1997-98.

Global Market Boost. The law continues funding for the Dairy Export Incentive Program (DEIP). This program can help by building foreign markets for Minnesota dairy products. In the long run, it may improve the price you get for milk by increasing overall product demand.

Regional Revisions. The law changes how milk is priced in California, slightly leveling the playing field with Minnesota producers. But it also gives USDA the right to set up a dairy compact (regional pricing system) in the northeastern states that would work against other efforts to improve the fairness of milk markets. If the agency does approve the compact, it could affect milk prices all over the country, Haire says. The Minnesota Department of Agriculture strongly opposes the compact and has been a leader in the effort opposing it.

Price Support Phase-Out. Under the 1996 law, price supports for milk and dairy products will gradually decrease until January 1, 2000, when they will disappear entirely. According to Haire, if USDA reforms the Class I pricing structure, this phase-out probably will not shake the barn too much, since prices have been above support anyway. If the Class I differential doesn't improve, however, loss of price supports could result in disadvantageous pricing moves by producers who have the edge under the existing system.

Minnesota producers may also be interested in a program established by the 1996 law known as the Environmental Quality Incentives Program, or EQIP. This authorizes \$1.33 billion in grants and technical assistance for projects to reduce water pollution from feedlots and other non-point sources. It'll be awhile until it's up and running, but you might start thinking now about applying for financial help with changes you'd like to make in your operation. For more information, contact USDA's Natural Resources Conservation Service at 612-290-3675.

If you have any questions on the farm bill, please call policy director Dirk Haire at 612-296-4435.

Bedding Management

Good management is key to low SCC, clinical mastitis in summer

by JEFF RENEAU
extension dairy specialist

Has mastitis been a problem on your farm this summer? If so, it's time to check your bedding management.

Bacteria that cause mastitis are usually transmitted from bedding to the teat surface when the cow lies down. During the cooler months, the growth of bacteria in bedding is minimal and the threat of teat exposure is relatively low. Warm weather increases the growth of bacteria. Unless you change bedding management during the summer, the bacterial count in all bedding will increase dramatically, increasing risk of both high SCC and clinical mastitis.

How can you tell if the bedding is clean? Even when it looks clean, it may be loaded with environmental pathogens. Research has shown that bacterial counts should be below 1 million per milliliter of bedding. To find out the level of bacteria in your bedding, collect a representative sample of bedding from the rear of every other stall. Place samples in a clean container, mix them up, and re-

THE BEST BEDDING. What kind of bedding is best? The best bedding is clean (bacteria-free), dry, and comfortable material that the cows like to lie down in. Beyond that, which bedding is best for you depends on your housing, manure system, and the relative availability and cost of various options.

move a subsample. Place the subsample in an airtight sample bag and refrigerate until you take it to the lab for culturing. (If you mail the sample, cold-pack it and don't mail over a weekend so it doesn't incubate during transport.)

Bedding Choice

There are great differences among bedding materials. The ability to support bacterial growth is an important difference between organic (straw, cornstalks, sawdust, paper) and inorganic (washed sand) bedding.

All organic bedding has nutrients for bacterial growth. The amount and avail-

ability of nutrients varies considerably, but in general paper offers slightly fewer nutrients than either sawdust or straw.

Washed sand has no nutrients to support bacterial growth, so it has great advantages over organic bedding from this standpoint. However, this is only true when sand is free of organic matter. Ideally, fresh, dry bedding will have 5,000 or fewer bacteria per milliliter before it is used. Some sources of sand bedding have had 200,000 or more bacteria per milliliter prior to use. Sand that has a significant amount of organic matter—including manure, urine, or milk—as well as bedding that has been stored in wet conditions should always be suspect.

Regardless of what kind of bedding you use, it is important that you keep bacteria counts below 1 million bacteria per milliliter of bedding. Anytime counts are higher than that you should adjust your bedding management.

When to Change

How can you determine how often you need to change bedding? Collect a representative sample of bedding from the back half of the stall just before you change it. Submit the bedding sample for bedding culture as described above. If the sample has more than 1 million



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Minnesota does
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The address is:
Veterinary Diagnostic Lab
University of Minnesota
1333 Gortner Avenue
St. Paul, MN 55108

Your veterinarian has
diagnostic lab forms
and can help interpret
the results.

Handy Hints

IN ADDITION TO properly managing bedding, the following suggestions can help you minimize SCC/mastitis problems:

- **Feed cows after milking.** If cows lie down right after milking, bacteria can enter the relaxed and partially open teat canal. Feed will encourage them to stand long enough to let the teat canal close after milking.
- **Reduce "air slips" and use proper pre-milking prep.** Reverse flow impacts caused by air slips during milking can inject bacteria from contaminated teat surfaces or milking equipment through the teat canal. Use proper premilking cow prep procedures and control air slips to minimize this problem.

bacteria per milliliter of bedding, follow these steps:

1. Sample and culture fresh bedding before use to see how clean the bedding is before it is placed in the stall.
2. After rebedding stalls, take a sample to culture every 24 hours until you rebed the stalls again. This will allow you to determine the rate of bacterial growth in your stalls.
3. Use this information to determine the bedding frequency you need to keep bacteria counts below 1 million per milliliter.

Other variables should also be considered when adjusting bedding management—for example, the frequency with which alleys are scraped, the relative temperature and humidity, and the barn's ventilating capacity. Changes in any of these factors may influence how often bedding needs to be changed. 

Remember that the guideline is to keep bedding bacterial counts below 1 million bacteria per milliliter of bedding. If your bedding management achieves this goal, you will be able to control herd SCC and environmental mastitis more successfully.

Assess Alfalfa Now

When do you think about whether to keep or replace an existing alfalfa field? If you wait until spring, you're waiting too long, says extension forages specialist Neal Martin. According to Martin, now is the time to assess your alfalfa. If you decide in the fall which fields are going under, you can till before winter and be a step ahead next spring. You also can include the alfalfa field in your overall crop plan and be ready for fall fertilizer and spring herbicide application if you decide to rotate to corn or another crop. Martin and colleagues at the University of Wisconsin suggest the following steps to assess your field:

1 ESTIMATE YIELD POTENTIAL. Mark off 2-square-foot representative samples at three to four sites (more counts, not to exceed 20, represents a field best) around the field. This fall, after alfalfa is at least 6 inches tall (6-10 inch height is best), count the number of stems 2 inches or taller in each sample. Divide your count by two to get the count per square foot, then average for all sample sites. To estimate the yield in tons of dry matter per acre that stem count can produce under ideal conditions, divide the count per square foot by 10 and add 0.38.

2 CHECK PLANT HEALTH. Dig out plants from three or four sites around the field, making sure to take the top 6 inches or so of root. Look at the plant crown's size, symmetry, and number of shoots. Then cut the root lengthwise. A healthy root will be light-colored throughout. Less healthy plants may have dark sections extending down from the crown indicating rot. Rate each plant from 0 to 5, where 0 is a perfectly healthy plant with a large, symmetrical, many-stemmed crown and no root rot, and 5 is a dead plant.

3 DECIDE WHETHER TO REPLACE. If your stand density is higher than 55 stems per square foot, you're in good shape. If it's lower than that, your yield next year (assuming no winterkill) will probably be what it was this year as long as at least 70 percent of the plants rated 3 or better on the health scale. If the stand density was less than 39, consider replacing the field. But do so in the context of what else is out there. Remember, older stands (3 years or older) are more susceptible to winterkill, and wet soil conditions in the fall predispose alfalfa plants to winterkill. If it was a tough year all around, you may want to keep stands that would otherwise warrant replacing. 

WEED CHECK. Fall assessment is a good time to check for weed problems. Make note of infestations that will substantially limit yield or quality and mark those sites for possible spring herbicide application. If a stand is old and full of weeds, you probably should rotate it into corn for a year or two.

TO BUILD A handy plot sampling tool for measuring a 2-square-foot area, join pieces of 1/2" PVC pipe to make a square 17 inches on each side, or weld a piece of metal into a ring 19 inches in diameter.

Pricing Corn Silage

by WILLIAM LAZARUS
extension farm management specialist and JIM LINN extension dairy specialist

How much is corn silage worth?

Corn grain prices have been volatile in 1996. If you're selling corn silage out of the field or from storage, how should you price it to bring it somewhat in line with gyrating grain prices?

The rule of thumb is that a corn crop will yield one ton of silage for every nine bushels of grain it would have produced. Pricing silage to correspond to a projected grain price at harvest of \$3.60 per bushel gives:

$$\$3.60/\text{bu} \times 9 \text{ bu/ton} = \$32.40/\text{ton.}$$

This projection is one-third higher than at last year's \$2.70 harvest time corn grain price, corresponding to a silage price of \$24.30 per ton.

The Seller's Position

You may face a choice between selling corn out of the field as silage, or combining and drying the grain for sale. By summer, growing costs are sunk costs, but there may be a difference in harvesting costs for silage versus grain that will affect the net value received from the crop. It may be worth accepting a lower price for the silage than what the grain is worth if you can make up the difference with silage harvesting costs that are less than costs to combine and dry the grain.

A market survey we did several years ago found the cost of corn grain combining and drying with a custom operator can run \$50-60 per acre. The rate for chopping corn silage averaged \$63 per hour, which works out to \$38 per acre at 1.65 acres per hour. Include costs to haul the silage and get it into storage, however, and total harvesting cost per acre may work out to be about the same as the grain cost.

If you have your own harvesting equipment,

you will probably use it rather than hire a custom operator. You are incurring your equipment's ownership costs of depreciation, interest, and insurance regardless, so the marginal cost of using it on the additional acres is just the operating costs of fuel, repairs, and labor. The custom rates in your area are a useful guide, but may not correspond to your costs. The market for custom work usually does not cover all costs. The market is usually somewhere between the operating costs and the total of operating plus allocated per-acre or per-hour overhead.

One source of information on figuring operating costs is *Minnesota Farm Machinery Economic Cost Estimates for 1996* (AG-FO-6696), available through your county extension office. For example, the estimated cost to operate a two-row forage harvester with tractor and operator is \$61 per hour, or \$37 per acre at 1.65 acres per hour and 100 hours per year. Operating costs such as fuel, repairs, and labor come to \$15 per acre, with ownership costs making up the other \$22 per acre. At an 18-ton-per-acre yield, this works out to \$2.05 per ton. Add something to this to cover the cost of hauling and storing, if applicable.

The Buyer's Position

If you're feeding corn silage, the question is, what is the dollar value of corn silage relative to other feeds and nutrients in the diet?

The best way to calculate a true economic value for corn silage is to use a least-cost ration program. Here, what you feed depends on each component's nutrient content, price, and ability to meet nutrient requirements. You use the feeds that meet the requirements at the lowest price. Feeds not included in the ration are assigned an opportunity value or a price at which they would be considered

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UPDATE

MINNESOTA DAIRY LEADERS ROUNDTABLE



In 1992 dairy farmer leaders 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 efforts — that structure is the Dairy Leaders Roundtable. This newsletter highlights Roundtable accomplishments as well as on-going projects and plans.

Midwest Dairy Management Conference

Scheduled for August 28 and 29, The Midwest Dairy Management Conference will provide the "big picture".

For Midwest dairy producers, the Minneapolis Convention Center is the place to be August 28 and 29.

It's the site of the first-ever Midwest Dairy Management Conference organized by the land grant universities.

"This conference will bring together the best of the Midwest dairy industry," B. J. "Joe" Conlin of the University of Minnesota Dairy Science Department, says. Conlin is a lead member of the conference planning committee.

The conference is designed to help Midwest producers position their businesses for the future and provide information they can take home

and apply immediately.

Day-one speakers will focus on shaping production agriculture, managing forages, dairy manure and nutrients and herd management.

The second day of the conference will focus on business management skills. Highlights include a panel discussion on controlling feed costs, managing milk price risks through the futures market, financial benchmarks and critical success factors, employee management skills, optimizing parlor performance, effective use of consulting services and managing a growing operation.

Breakfast, lunches, a trade show and a Wednesday evening reception are included in the cost of the conference. Registrations received before August 1 are \$119; registrations after August 1 are \$149.

For further information or to register for the conference, contact Gerald Wagner at 1-800-867-5363 or (612) 625-1214.



B.J. Conlin, University of Minnesota, Extension Dairy Specialist



Maynard Hogberg Head, Department of Animal Science Michigan State University



Involved in a discussion on the future of the state's animal agriculture industry were dairy industry persons such as, from left, Steve Sturm, All American Co-op, Gary Allen, a dairy producer from Eoyota, Minn. and Tom Cochrane of the Minnesota Agri-Growth Council.

Revitalizing a state's animal agriculture

Maynard Hogberg wanted to improve Michigan State University's animal science department.

What Hogberg, the department's head, received was \$70 million to enhance animal agriculture programs at MSU.

"I just kept thinking big," Hogberg told those attending the Minnesota Dairy Leaders Roundtable Meeting June 19.

Hogberg was active in a committee -- Revitalization of Animal Agriculture Steering Committee -- charged with halting the decline in resources directed toward the needs of animal agriculture in Michigan.

"The committee looked at how we could help increase producer profitability," Hogberg says. "Our goal wasn't expansion, but profitability spurs expansion."

The committee brought the state's animal agriculture interests together when developing their request to the state legislature.

"When the various animal industries come together -- beef, pork, dairy and poultry -- we have a lot more clout," he said.

After two years of lobbying, animal agriculture received:

- Monies to renovate the animal science facilities at MSU; and
- Funding for new faculty positions, extension field staff, support staff and graduate assistantships.

"But the funding was only the beginning," Hogberg says.

"The industry alliances formed during the lobbying process and organizational changes within the state's agricultural staff are real benefits of the process."

MSU is just completing its renovation of the animal science facilities. Hogberg says legislators recently visited the facility and he heard the House Agriculture Committee Chair say, "This was a good investment."

"When I heard that I knew the hard work was paying off," Hogberg says.

Minnesota's proposal

John Fetrow, representative of the dairy industry and the Roundtable, outlined a proposal to enhance funding for Minnesota's dairy industry.

The Minnesota Dairy Development Fund would be a non-profit foundation funded by the state's dairy producers and state of Min-

nesota.

The funds would be controlled by the industry and allocated to broad goals, such as producer education, research and development and an endowment of industry and professional positions.

The proposal will be considered by the Minnesota Dairy Leaders Roundtable Steering Committee this summer.

Economic impact study update: Minnesota short of production goal

If Minnesota dairy producers want to reach their goal, more milk must flow through the pipeline.

That's according to an update presented by Don Ault of AG•NOMICS RESEARCH, New Brighton, Minn.

The update was a spin-off of a 1992 economic impact study on Minnesota's dairy industry.

Ault says Minnesota's dairy sector has been losing, on average, .7 percent of its production per year since 1992.

In the time span since the 1992 study, 1995 was the first year to show signs of increased milk production.

To reach the goal established by Minnesota's Dairy Leaders Roundtable of producing 6.8 percent of U.S. milk production -- the state's market share in 1990 -- Minnesota needs to produce about 1.3 billion more pounds of milk.

In practical terms, 1.3 billion pounds is equal to output from either 650 modern

100 cow dairies, 130 modern 500 cow dairies or increasing the state's average production per cow in all herds by 2,200 pounds.

When considering how to address declining production, Ault compared Minnesota to states with growing market share such as Washington and Idaho.

"You hear a lot about Idaho but they have no more advantages than we do," Ault says.

In a recent visit to the state, Ault heard comments about how fortunate Midwest dairy producers are to have an ample grain supply and milk prices which far exceed the West.

"It's not uncommon to hear producers from Idaho make comments like, 'Next time I come to Minnesota I'll bring the cows with me,' Ault says.

"It's important to realize a growing dairy industry creates a win-win situation," Ault says. "If the dairy industry prospers the entire state benefits. If we stay on our current downsizing trend there could be a gross revenue loss of \$1.1 billion for the state of Minnesota."

MARKET SHARE

Minnesota production as % of U.S. production

1980	7.5%
1990	6.8%
GOAL FOR 2000	6.8%
TREND	5.7%
WORST CASE	5.3%
PRESENT	6.1%

AG•NOMICS RESEARCH

First quarter production begins climb

State milk production is beginning what Bill Coleman thinks might be a slow climb.

Coleman, of the Minnesota Department of Agriculture's dairy division, reported production statistics to those attending the June meeting of the Minnesota Dairy Leader's Roundtable.

In the first quarter of 1996, Minnesota's milk production accounted for 6.26 percent of U.S. production, compared to 6.07 percent in 1995, 6.08 percent in 1994 and 6.44 percent 1993.

Though the number of Minnesota dairy farms continue to decline, production per cow and per farm is on the rise.

"Even though we're losing dairy farms the cows are, for the most part, staying in production," Coleman says.

Milk produced by the state's cows garnered an average price per hundred-weight for Grade A milk of \$13.14 in April, 1996.

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If you have questions about regulations, permits or other dairy development issues you can get advice toll-free from an Agriculture Development Specialist, Minnesota Department of Agriculture by calling

1-800-967-AGRI (2474)

Calendar of Events

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

J U L Y

- 30-31 Minnesota Alfalfa and Forage Expo-Durst Brothers Farm, Kasson, MN. Contact: Neal Martin 612-625-3747

A U G U S T

- 6-8 Farm Fest, Redwood Falls, MN. Contact: Redwood County Extension Office 507-637-8323
 22-9/2 Moo Booth-Minnesota State Fair, Fairgrounds, St. Paul, MN. Contact: Doris Mold 612-626-1277
 28-29 Midwest Dairy Management Conference-Minneapolis Convention Center, MN. Contact: Gerald Wagner 612-625-1978 or Joe Conlin 612-624-7497

S E P T E M B E R

- 5 Sustainable Grazing Seminar, (location to be announced). Contact: Neal Martin 612-625-3747
 12-13 Minnesota Sanitarian Conference, Earle Brown Center, U of M, St. Paul Campus. Contact: Dan Erickson 612-297-2134
 23-25 Minnesota Nutrition Conference, Bloomington, MN. Contact: Gerald Wagner 612-625-1978

O C T O B E R

- 2-6 World Dairy Expo, Madison, WI.
 7-10 Minnesota Extension Service Annual Conference for MES Employees, Craguns, Brainerd, MN. Contact: Bill Wilcke 612-625-8204 Home Page: <http://www.mes.umn.edu/~annconf/>
 8-10 Minnesota Dairy Advisors Fall Workshops, (locations to be announced). Contact: Walt Ogburn 612-439-7117

N O V E M B E R

- 12-14 Intensive Alfalfa Seminar, Grand Rapids, Michigan
 13-15 Dairy Expansion Conference, St. Paul, MN and Dubuque, IA. Contact: Joe Conlin, 612-624-7479
 25 Minnesota State Holstein Fall Sale-McLeod County Fairgrounds, Hutchinson, MN. Contact: Jim Kraus 320-259-0637

D E C E M B E R

- 9 Dairy Leaders Roundtable Meeting, Sheraton Midway. Contact: Ed Frederick, 507-835-3422
 9 & 10 National Alfalfa Symposium, San Diego, CA
 10 Minnesota Dairy Advisors Annual Meeting, St. Cloud, MN. Contact: Walt Ogburn 612-439-7117
 10 Financial Planning Workshop, LaCrosse, WI. Contact: Joe Conlin 612-624-7497
 11-12 Dairy Personnel Workshop, LaCrosse, WI. Contact: Joe Conlin 612-624-7497

J A N U A R Y

- 6 Dairy Expo, Otter Tail County, MN. Contact: Minnesota Extension Service, 218-385-3000 or 218-739-2271.
 7 Roseau Dairy Day, Roseau, MN. Contact: Roseau County Extension Office, 218-463-1052

- 8 Crookston Dairy Day, Crookston, MN. Contact: George Marx 218-281-8606

- 7 & 14 & 21 Dairy Management Workshops, Atwater, MN. Contact: Pat Kearney 320-231-7890

- 28 & 29 Cow College, Rochester, MN. Contact: Jim Linn 612-624-6789

F E B R U A R Y

- 4,5,6 Forage Expo (tentative dates), Willmar, MN. Contact: Neal Martin 612-625-3747
 15 Red River Valley Dairy Days, Crookston, MN. Contact: George Marx 218-281-8606
 17-19 National Mastitis Council Annual Meeting, Albuquerque, New Mexico. Contact: Anne Saeman 608-224-0622

M A R C H

- 3-7 Four-State Dairy Management Seminars, Breeze, IL; St. Cloud, MN; LaCrosse, WI; Fond Du Lac, WI; Dubuque, IA. Contact Jeff Reneau 612-624-9791
 17-19 Midwest Animal Science Meetings, Des Moines, IA. Contact: Jim Linn 612-624-6789
 19-20 Four-State Dairy Science Meetings, Des Moines, IA. Contact: Jim Linn 612-624-6789

M A Y

- 20-22 Minnesota Dairy Health Conference, Earle Brown Center, U of M, St. Paul Campus. Contact: Charles Casey 612-624-1711

A U G U S T

- 5 & 6 Four-State Nutrition Conference (location to be announced). Contact: Randy Shaver 608-253-9412

Any changes to the Minnesota Dairy Calendar may be directed to:
 Dave Weinand, Dairy Initiatives, U of M,
 122 Peters Hall, St. Paul, MN 55108

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Pricing Corn Silage

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for use in the ration.

Sometimes you only need a quick determination of corn silage's worth based on a few feeds and nutrients. Because corn silage is both a forage and grain, it is appropriate to price it against hay (fiber source) as well as corn grain (energy source) and soybean meal (protein source). The formula for pricing corn silage on an as-fed basis of 35-40 percent dry matter (DM) is as follows:

$$\begin{aligned} \$/\text{ton as fed} &= (\$/\text{ton of corn grain} \times 0.19) \\ &\quad - (\$/\text{ton of soybean meal} \times 0.059) \\ &\quad + (\$/\text{ton of hay}^* \times 0.263) \end{aligned}$$

Example: corn @ \$4.00/bushel = \$142.86/ton

soybean meal = \$240/ton

hay = \$100/ton

$$\begin{aligned} \$/\text{ton of corn silage} &= (\$142.86 \times 0.19) \\ &\quad - (\$240.00 \times 0.059) \\ &\quad + (\$100 \times 0.263) \\ &= (27.14) - (14.16) + (26.3) = \$39.28 \end{aligned}$$

*relative feed value 100-125 and 15-18 percent crude protein

This formula works for corn silage with 50 percent or more grain on a DM basis. As fiber content increases, grain content generally decreases. Test corn silage and adjust your calculated price based on the ADF content as follows:

ADF CONTENT OF WHOLE PLANT, % DM BASIS	ASSUMED GRAIN CONTENT, % OF DM	PRICE DISCOUNT FACTOR
26	50	1.00
27	48	0.98
28	46	0.96
29	44	0.92
30	42	0.88
31	40	0.84

Multiply the price calculated from the formula above by the discount factor to calculate price based on ADF content of the corn silage. For example, if the corn silage above has an ADF content of 29 percent, multiply \$39.28 by 0.92 to calculate the price of \$36.14 per ton at 35 to 40 percent DM. 



Stan Vander Kooi moves heifers to fresh paddocks daily to keep pasture and animals growing strong.

Rotational Grazing Boosts Heifer Operation

By DAVID WEINAND
Dairy Initiatives coordinator

FARM FACTS: Stan Vander Kooi custom raises heifers for a dairy producer near Buffalo, Minnesota. He practices rotational grazing to more efficiently utilize the grasses and offer fresh forage to the livestock on a daily basis. The 80 tillable acres he farms provide 15 acres of pasture as well as hay for the heifers. "You still need to bale for winter use," he explains.

Stan currently has 19 paddocks, each approximately 1/2 acre. The 40 heifers he's now grazing are left out on a paddock for a day. The following day a new paddock is opened. The previous paddock is allowed to rehabilitate over the next 25 days, and is then grazed down to a level of 4 to 5 inches again.

Stan says that a six- to eight-month pasture grazing goal is realistic if you manage your pastures properly. By stockpiling paddocks in August, you should be

able to extend the grazing season into October. Stan provides supplemental grain early and late in the grazing season, and offers free choice an ionophore mixed with salt all year long.

Stan sees rotational grazing as good for the land, good for the heifers, and good for him, too. It not only saves an average of 10 cents per head per day in heifer-raising costs, it also makes sense from a labor standpoint. "Let the cattle do the work for you and the cattle will distribute the manure," he says.

RECENT MOVES: Recently Stan incorporated a fly control procedure that the cattle rub against as they receive free choice

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David Weinand

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Rotational Grazing

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salt. The procedure has reduced the problem he's been having with flies. He has also added more paddocks to those he started with just three years ago.

Additionally, the use of heat detectors or tail-head markers has assisted in detecting heats. Stan explains that the challenge with grazing and heat detection is that, although you can watch for heats every day, heifers are more concerned with grazing than showing signs of heat. He remarked that you could utilize a marker bull to detect heats, but then you have another animal to feed.

FUTURE PLANS: Future plans include adding water to each paddock and increasing the sward (variety) of grasses to include more warm- and cool-season grasses. Adding more paddocks and doing some frost-seeding of clovers and grasses is also on the agenda for the next year. The border fences Stan is using are temporary, so upgrading to a more permanent fence is also in the future plans.

ADVICE: For someone looking into grazing heifers, Stan recommends not putting up a permanent fence right away, but to do a good job when you do put up fences. Stan uses fiberglass posts approximately 11/16" in diameter and a poly/stainless wire combination to divide lanes and separate paddocks. Paddocks are then subdivided using smaller posts and the entire paddock is charged using an electric fencer.

"When building your lanes and gates, build them wide enough to get through with your tractor and haybine," Stan recommends. This will allow you to clip your pastures in a relatively short period of time and will allow more room for new heifers, which may get pushed around at first. "Once your fences are set up it is quick to change paddocks," said Stan. "The cattle get used to you and develop herding instincts."

You need to read a lot and talk to others to get ideas on rotational grazing, states Stan. But, he adds, it's worth it. "I really believe in erosion control. Even if the land was flat . . . I'd still rotationally graze." 



Herd Health Tips

A healthy herd is the foundation of a healthy dairy farm. Sick cows can take a heavy toll on profitability by forcing you to take actions such as discarding antibiotic-contaminated milk or culling animals.

The first step in keeping your cows healthy is to understand what can go wrong and why. Then you can take steps to prevent problems as well as to resolve them when they do occur.

Foot Problems: Laminitis

Laminitis, one of the most frequent causes of foot lameness in cattle, is often traced to ruminal acidosis. It's also related to poor hoof care and heat stress. To minimize laminitis problems, extension veterinarian Jerry Olson offers this advice:

- *Keep hooves in good shape.*
- *Use an appropriate transition ration.* A special ration during the last weeks of pregnancy gives the cow a chance to adjust gradually to the richer lactation diet, reducing the likelihood of acidosis. Begin feeding the transition ration two to three weeks before calving.
- *Formulate rations properly.* Make sure that acid detergent fiber (ADF) is at least 21 percent of DM and neutral detergent fiber (NDF) at least 28 percent of DM. At least 18 percent of NDF should come from forage. No more than 40 percent of the ration should be nonstructural carbohydrate (NSC).
- *Feed coarsely chopped forage.* Larger forage particles stimulate production of saliva, which helps prevent acidosis. At least a quarter of silage particles should be 1.5 inches or longer.
- *Consider using buffers.* Ruminal buffers such as sodium bicarbonate can help minimize acidosis risk in early lactation. Feed sodium bicarbonate at a rate of 0.75 to 1 percent of the total ration dry matter.
- *Minimize heat stress.* Panting and reduced appetite caused by heat contribute to acidosis. Keep cows as cool as possible, and increase rumen buffers in heat-stressed cows by 50 percent over normal rates to head off potential problems. 

Your hooves are soaking in dishwashing liquid.



Teat Problems: Lesions

Teat lesions, or sores, can be caused in a variety of ways. Some lesions cut into your profitability by making cows hard to milk and opening the door for mastitis problems. Others are relatively harmless. Similarly, some can be prevented or treated, while others pretty much need to run their course. According to extension veterinarian Ralph Farnsworth, identifying the cause of lesions is an important first step in deciding how to respond in order to minimize their impact on your operation.

Milking Machines. Contrary to popular belief, milking machines rarely cause teat lesions. Teats with "pulled out ends" and callous-like tissue that looks a bit like a Cheerio around the teat opening—a condition



John Bush © 1996

known as hyperkeratosis—have been blamed on milking machines. However, Farnsworth and colleagues have found the same condition in beef and hand-milked cows, making the link highly suspect. They also have found no connection between hyperkeratosis and frequency of mastitis. Conclusion: if your cows have pulled-out, calloused teats without actual sores, don't worry about it.

Teat Dipping. Post-milking teat dipping can cause lesions if the solution is mixed or used incorrectly. If you suspect a problem with your teat dip, check the instructions to make sure you're using it right, or consider switching products to find one better suited to you and your cows.

Weather. Water or milk remaining on teats can freeze and cause injury in cold, windy weather. Dip teats after milking, then blot off the excess or keep animals inside until teats are dry.

Viral Infections. Many teat sores that are blamed on milking machines are actually the result of viruses such as pseudo cowpox and herpes. Herpes is especially suspect when problems occur between November and April.

It's worth the price of a diagnostic test to find out if a virus is the culprit or if you ought to keep looking for other sources of the problem. There's not much you can do to prevent or treat viral infections, though. Your best action is to try to prevent mastitis complications with good hygiene. 

Futures

Continued from page 2

- manager, or if it keeps you awake at night, it's not for you.

- Only you and your financial partners (family members included!) can decide if the benefits of futures trading outweigh the costs, financial and psychological. That's different for each producer. But it is worth the time and effort to at least consider whether this management tool has a place in your overall farm operation.

Words to the Wise

- If you do decide to try futures, extension grain marketing economist Stan Stevens offers this advice:

- *Start Out Small.* Don't go betting the farm on your market savvy. If you're trading grain futures, for instance, don't hedge more than 10 to 20 percent of the amount of grain you'll be needing. It's smarter to wade than dive in unfamiliar waters.
- *Use Brokers Cautiously.* Brokers, the people who buy and sell the futures for you, are paid every time you make a transaction. Does that sound like the best source of advice as to when and how often to buy and sell futures? Probably not. You're probably better off basing your "when" and "how much" decisions on other advice and reserving the broker's expertise for making the actual trades.
- *Get Good Advice.* When it comes to predicting where the market is headed, everyone is an expert—with someone else's money, that is. Keep your eyes and ears open for advice, but consider carefully its source. There are many newsletters and other publications available that offer suggestions for those in the futures market. Ask your librarian for a copy of the directory published by *Futures* magazine for more information.
- *Form a Marketing Club.* Consider joining with other farmers to evaluate and make decisions about futures trading. You can benefit from each other's perspectives and information. You can also share a subscription to a trading newsletter that will provide valuable advice. 

Beyond the Bottom Line: Planning Your Retirement

by CINDY PETERSEN
extension educator, McLeod County

Retirement is like a vacation—if you want to enjoy it, you need to plan it. Many people avoid thinking much about retirement until it's just a few years away. It's better to start planning in your middle years or before. The earlier you begin, the more control you have over the outcome.

To plan your retirement, extension family resource management specialist Sharon M. Danes suggests you follow eight steps: 1) identify and set goals; 2) estimate retirement length; 3) estimate expenses; 4) calculate net worth; 5) estimate income after retirement; 6) deal with potential deficiencies; 7) evaluate insurance needs; and 8) follow through. In this issue of *Dairy Initiatives Newsletter*, we will look at the first five.

1. Identify and Set Goals

What would you like your retirement to be like? Your answer to that plays a big role in determining how much money you will need. As you set goals, make sure they are:

- Clear
- Specific
- Realistic
- Broken down into short- and long-term
- Shared
- Prioritized
- Subject to change

Use the accompanying worksheet to brainstorm what you'd like life to be like when you're retired. If you're married, write down your individual visions and then compare. What goals do you share? What goals conflict? Discuss the "why" behind your dreams, and brainstorm new options until you find something that works for both of you.

2. Estimate Retirement Length

Next, estimate how long you'll be retired. That depends on two things: when you'll retire, and how long you'll live.

Most people think of retiring at age 62 or 65. The advantage of early retirement is that you have more time for activities and leisure. The disadvan-

tage is that you will have less retirement income because you have worked less and have more years of retirement to finance.

When planning when to retire, consider your social security status. The age at which full benefits kick in depends on when you were born. The amount of your benefit depends on your earnings in recent years. If you have had a high income and so have paid lots of social security, you may be better off retiring early. If you have had low income, you might benefit from working until age 65 but trying to raise your income.

How long will you live? The longevity of your mother, father, and other family members is a clue. Your overall health and healthy or unhealthy habits are others. Depending on current age, average life expectancy for Minnesotans is 81-86 for women and 75-82 for men.

Decide when you'd like to retire and take an educated guess at how long you'll live. The difference is an indicator of how many years of retirement income you may need.

3. Estimate Expenses

After retirement, your expenses may increase for health care, health insurance, travel, and leisure. They may drop in the areas of taxes, work-related expenses, and savings.

Though your expenses will depend on how you spend your retirement, for simplicity's sake you may wish to assume you'll want your level of living to be about what it is now. That means you need to know your household expenses. If you haven't kept records, do so now for several months. Most people are able to maintain their lifestyles if retirement income is 55 to 80 percent of current income.

You also need to adjust for inflation. Although you can't predict future inflation, it helps to know that over the past 25 years the average annual rate has been 5.1 percent. Use the table on page 11 to find an inflation factor that fits your circumstances.

"But You Said

You Wanted to Travel!"

AS YOU WORK out your future together, be careful not to base your plans on assumptions you're making about the other person's wishes, especially ones expressed long ago. Opinions change over time. Begin where you are now, not where you thought you may have been years ago.

Young Farmers: Listen Up!
THOUGHT you'd skip this article because it's only for the old folks? Wrong!
The best time to start planning your retirement is when you start farming. So read on.

Table 1. Inflation factors.

Years Until Retirement	INFLATION RATES				
	5%	6%	8%	10%	12%
2	1.10	1.12	1.17	1.21	1.25
4	1.22	1.26	1.36	1.46	1.57
6	1.34	1.42	1.59	1.77	1.97
8	1.48	1.59	1.85	2.14	2.48
10	1.63	1.79	2.16	2.59	3.11
12	1.80	2.01	2.52	3.14	3.90
14	1.98	2.26	2.94	3.80	4.89
16	2.18	2.54	3.43	4.59	6.13
18	2.41	2.85	4.00	5.56	7.69
20	2.65	3.21	4.66	6.73	9.65
22	2.93	3.60	5.44	8.14	12.10
24	3.22	4.05	6.34	9.85	15.18
26	3.56	4.55	7.40	11.92	19.04
28	3.92	5.11	8.63	14.42	23.88
30	4.32	5.74	10.06	17.45	29.96
32	4.76	6.45	11.74	21.11	37.58
34	5.25	7.25	13.69	25.55	47.14
36	5.79	8.15	15.97	30.91	59.14
38	6.39	9.15	18.63	37.40	74.18

Adapted from Garman, T.E., and Forgue, R.E. 1991. Personal Finance. 3d ed. Boston: Houghton Mifflin.

How to put this all together? Say your current annual expenses are \$15,000, you'd like to retire in 16 years, you think you can make it on 80 percent of your current income, and you predict annual inflation of 6 percent. Here's what your calculations would look like:

$$\$15,000 \times 0.80 = \$12,000$$

$$\$12,000 \times 2.54 (\text{from Table 1}) = \$30,480$$

Based on your assumptions, you will need \$30,480 per year when you retire.

4. Calculate Net Worth

Calculate your net worth—the value of your home, collections, savings, and so on—yearly to see if you're on the right path to having the money you need when it's time to retire.

Remember that although your farm is worth money, it's not like you have that money in your pocket. Do you plan to transfer the farm to a son or daughter? If so, you'll need to work out a payment plan that gives you the money you need without drowning the new farmer in debt. Will you sell or rent the property to other farmers? Make sure it's an arrangement that gives you the income stability you require.

5. Estimate Income After Retirement

Your income after retirement may come from a va-

Retirement Goals Worksheet

At what age do you wish to retire? _____

Where do you want to live? _____

In what type of housing do you wish to live? _____

What kinds of activities do you enjoy? _____

What kind of travel or hobbies do you hope to engage in? _____

Will you need to provide for a parent or children? _____

What kind of lifestyle do you wish to have? _____

What are your farm transfer plans? _____

Is part-time employment important to you? _____

How will you meet major medical expenses? _____

What financial support will you need to provide for your spouse or others after you die? _____

Do you want to leave an inheritance to children, friends, or charity? _____

What are some of your retirement dreams? _____

Add any additional goals you have _____

Adapted with permission from *Looking Toward the Future* by extension family resource management specialist Sharon M. Danes, revised in 1996 with assistance from Laura Stanton-Duff.

riety of sources—social security, retirement funds from off-farm jobs, earnings from savings, money generated by the sale or rental of your farm, part-time work, and so on. List all of your sources of income after retirement and calculate the annual total.

To find out your estimated income from social security, obtain a "Request for Earnings and Benefit Estimate Statement" form from the Social Security Administration by phoning 1-800-772-1213. It's a good idea to submit the form every three years or so to make sure you're being properly credited for the money you are paying into social security. 

TO LEARN MORE about planning for retirement, get *Looking Toward the Future*, a series of publications by extension family resource management specialist Sharon M. Danes, revised in 1996 with assistance from Laura Stanton-Duff. Contact your county extension office or MES Distribution Center, 800-876-8636 or 612-625-8173.

NEXT ISSUE:
*Planning Your Retirement:
The Final Steps*



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Initiatives

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