

ISU Extension View

News from ISU Extension to Iowa Dairy Producers

Volume 20

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January, 2007



Chris Mondak



Larry Tranel



Dale Thoreson

When is close enough not close enough? When is being several inches off going to cost you thousands of dollars? It's when we're dealing with dairy facilities because we know when the parlor floor is sloped the wrong way it may cause problems in certain types of parlors and when a freestall is a few inches off or a rail a few inches back the cows know it and their resulting behavior will give you less milk in return that can cost thousands of dollars each year.

Facilities that allow for cow comfort, maximized dry matter intake and milking and labor efficiency mean big bucks to Iowa dairy operations. Thus, it is imperative that producers and builders understand the why behind the design specifications so when needing to compensate in the middle of a job for a few inches here or there that major design mistakes are not made.

If you are building facilities in the near future, encourage yourself and especially your builder to attend the **Dairy Facilities Conference—Guidelines for Planning and Building Successful Dairies**. The details of this conference are advertised in the next column. The more participants, the better the discussion.

On behalf of the ISU Extension Dairy Team, we wish you a Happy and Blessed New Year.

Chris Mondak

ISU Extension Dairy Field Specialist, NW Iowa

Larry Tranel and Dale Thoreson

ISU Extension Dairy Field Specialists, NE Iowa

IOWA STATE UNIVERSITY
University Extension

Helping you become your best.

Dairy Facilities Conference

Guidelines for Planning and Building Successful Dairies

9:00- 9:30 am Registration, coffee, milk & rolls

9:30 **What is Happening in Iowa? An Overview of Dairy Facilities** by Chris Mondak (NW) and Dale Thoreson (NE)

9:50 **Critical Dairy Facility Components—It's a Matter of Inches** by King Hickman/Leo Timms

11:15 **Energy Efficiency on the Dairy—The Big Picture** by Scott Sanford, Univ. of WI

12 noon **LUNCH** Brief presentations from selected suppliers (12:45 – 1:15pm)

1:00 **Getting the Cows Milked—Options, Decisions, Guidelines to think through the Process** by Doug Reineman, University of WI

2:30 **REFRESHMENT BREAK**

2:45 **Manure Management Options and DNR regulations for Dairy** by Kris Kohl, NW and NE

3:30 **Financing Guidelines: Debt/Cow, Cash Flow Debt/Asset Ratio, Avoiding the Pitfalls** by Ron Hook (NW) and Robert Tigner (NE)

4 :15 pm **Adjourn**

Dates and Locations:

February 28th at NW IA Community College, Sheldon.

March 1st at NE Iowa Dairy Foundation, Calmar IA.

Registration is \$25.00 per person includes proceedings, lunch and breaks. Registrations should be sent to the Butler County Extension Office, Box 368, Allison, IA 50602. Call 319-267-2707 for information.

ISU Extension Dairy Team

“Bringing Profits to Life”

**NE Iowa Dairy Extension
Field Specialists**

Dairy Field Specialists

- Dale Thoreson, 319-267-2707
- Larry Tranel, 563-583-6496
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Farm Management, NE

- Robert Tigner, 641-394-2174

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- Brian Lang, 563-382-2949
- George Cummins, 641-228-1453

State Dairy Specialists:

- Dr. Lee Kilmer
- Dr. Leo Timms

Extension programs are available to all without regard to race, color, national origin, religion, sex, age or disability.

Inside This Issue:

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- **Kura Clover and Reed Canarygrass?**
- **Building Your Own Low Cost Parlor**
 - **Competing for Corn**
- **What Can You Pay for a Dairy Farm?**

Manure Applicator Certification for Dairy Operators

By Angie Rieck-Hinz, Department of Agronomy, Iowa State University

The manure applicator certification program is entering the ninth year, but often producers find it confusing as to who needs to be certified to apply manure. Any dairy operation considered a confinement feeding operation or an animal feeding operation in which animals are confined to areas which are totally roofed needs to meet the certification requirements. This means any confinement dairy with more than 500 animal units or approximately 357 mature dairy cows or 500 immature dairy cows needs to have certified manure applicators or needs to hire a certified commercial manure applicator to handle and land apply manure.

Confinement site manure applicators need to attend 2 hours of annual training or take and pass an exam every 3 years to be certified to apply manure. In addition, to complete certification requirements they must also submit the appropriate paperwork and fees to the Iowa Department of Natural Resources (IDNR). The only exemption to this requirement is if a part-time employee or family farm member is under the direct supervision of a certified applicator who is physically present and can observe and communicate with the employee or family farm member at all times.

Certification requirements may be met by attending the annual workshops sponsored by Iowa State University Extension. A complete list of the 2007 workshops can be found at:

<http://extension.agron.iastate.edu/immag/certification/07confdates.html>.

If you wish to take the exam to meet certification requirements, please contact your local IDNR field office to schedule an appointment to take the certification exam.

Any dairy, regardless of size, that hires a commercial manure applicator to handle, transport or apply manure must hire a certified commercial manure applicator. A list of certified commercial applicators can be found at:

<http://extension.agron.iastate.edu/immag/info/cca.xls>

If you have questions about manure applicator certification requirements please contact your local ISU Extension office or Angie Rieck-Hinz at 515-294-9590.

2nd Annual I-29 Dairy Conference Convenes in Sheldon IA, Feb 1 2007

The challenge of producing high quality, high value milk is the theme at the Second Annual I-29 Dairy Conference, set Jan. 31, 2007, in Watertown, S.D., and Feb. 1 in Sheldon, Iowa. The Jan. 31 sessions are at the Best Western Ramkota Hotel, 1901 Ninth Ave. S.W. in Watertown. **The Feb. 1 sessions are at Northwest Iowa Community College in Sheldon, 603 W. Park St.**

Both days begin with 8:30 a.m. registration and include the same panel of speakers. At 10 a.m., Lloyd Metzger of South Dakota State University discusses future trends in milk processing, fractionation, and pricing. At 10:40 a.m., a local milk processing company will offer a processor's perspective on the future of milk fractionation product. Rick Lundquist of Lundquist and Associates discusses adding value to milk through amino acid balanced rations at 11:10 a.m.

At 1:15 p.m., breakout sessions highlight dairy nutrition strategies to achieve production goals. Jim Salfer of University of Minnesota Extension focuses on current and future trends in dairy cattle feeding. Paul Kononoff of the University of Nebraska deals with the impact of 2006 corn silage on milk production and components.

Breakout sessions at 2:15 p.m. concentrate on udder health strategies to achieve quality milk goals. Leo Timms of Iowa State University Extension discusses nutrition and mastitis. Gary Neubauer of Pfizer Animal Health discusses the fundamentals of mastitis, and whether treatment protocols are cost-effective and efficacious.

Pre-registration by Jan. 24 is strongly encouraged to ensure a reservation. The fee is \$20 per person and includes lunch. For more information or to register for the Sheldon, Iowa site, contact Chris Mondak, ISU Extension – Sioux County office – 712-737-4230.

The event is sponsored by Iowa State University, South Dakota State University, the University of Minnesota, and the University of Nebraska, and by the Extension service at each of those universities.

Dairy Producers Learn to SPEAK OUT! A Report on a Workshop presented by Midwest Dairy Association

Chris Mondak
ISU Extension Dairy Field Specialist

“It’s not self-promotion – It’s self-preservation!”

is the message a group of dairy producers and professionals heard from Donna Moenning, VP of Industry Promotion and Marketing for Midwest Dairy Association, at a dairy industry public relations training workshop on December 7 in NW Iowa. This article highlights the key messages presented at the workshop.

If you are in dairy production agriculture, it is not enough to be good at managing your cows, your land, your family and workers. It is also vitally important to be involved in managing the messages that are delivered by and about our dairy industry. We must be ambassadors and educators for our industry, and we need to learn how to deliver the accurate, right message, with the right words, and the right simple delivery.

We often lament about how a reporter or news broadcast presents a negative message about agriculture, including dairy production. Why does this negative press happen?

Moenning’s explanation sheds light on this: Less than 2% of the US population lives on a farm, and more than 98% have little knowledge about how food is produced. In this information vacuum, the greater part of the population is likely to be influenced by the emotional, passionate, and often inaccurate messages delivered by anti-agriculture activists.

What’s a dairy producer to do? Moenning provided a quote from John Stossel, ABC’s 20/20 News Magazine correspondent to answer this question. Stossel said, *“Here’s how you (in agriculture) are getting rolled. You don’t talk as well as they (activists) do. You’re busy running your business or farm...and until you get up and start saying loudly, ‘Reporter, you got that wrong! Here’s the truth!’ Until you start speaking up, defending what you believe, you’ll keep getting rolled in the debate.”*

So how can we do better at “speaking out” our story? Moenning instructed that we have to give a

“Winning Message” – a message that addresses the fears and concerns of consumers, and that uses the right words and simple delivery style. For example, top concerns of consumers right now are Animal Care, Food Safety, Environment, and Nutrition. Here are demonstration answers Moenning provided to serve as examples of ways to answer questions on these hot button issues:

Animal Care: “Dairy cows must be healthy and well-cared for in order to produce pure, wholesome milk.”

Food Safety: “Milk and dairy products undergo a number of safety, quality and sanitation procedures such as pasteurization, making them amongst the most highly regulated and safest foods available to consumers.”

Environment: “As dairy farmers who live on or near the land that our families farm, we understand the importance of protecting our natural resources. We depend on this land for our business and quality of life.”

Nutrition: “Milk offers a powerful package of calcium and eight other essential nutrients for you and your family to enjoy.”

By reading these few paragraphs, you are already more informed and equipped to speak out for your industry than you were a few minutes ago. Want to learn more? You have several avenues to take to become more informed and skilled at message delivery to a reporter, your neighbors, a community group, or to a group of friends at church or other local organization.

1. Contact MDA – Midwest Dairy Association for more information and resources. Visit them at www.mda.com or www.3aday.org They have materials prepared and ready to be delivered to local groups

2. Look for an opportunity to take part in the 3-hour *Speak Out* workshop presented by MDA. This is an excellent way to learn information, practice skills, and build confidence in your ability to deliver a simple, effective message. ISU Extension is planning to host the MDA workshop again in the near future. Contact your region’s ISU Dairy Extension specialist to inquire about options to participate in a local *Speak Out* workshop.

Corn Co-Products, Can I feed Distillers Grains?

by Dale Thoreson, Field Specialist Dairy/Beef/Forages

Corn co-products have become much more available to dairy farmers in Iowa and the Upper Midwest. There are currently 26 operating ethanol plants in Iowa with plans to have 64 in and immediately surrounding the state by 2009.

There is still much confusion about these co-products. The confusion starts with the terminology used to describe the processing methods used on corn at the ethanol plants. There are two basic ways of getting the ethanol out of grain. One is the "wet corn milling process". This is used by the very large plants in Clinton, Cedar Rapids and Eddyville. They produce several products in addition to ethanol; these being Corn Gluten Feed, Corn Gluten Meal, Corn Germ Meal, Corn Oil, Corn Steep Water, Corn Bran, Distillers Solubles, and Corn Sweeteners.

The "dry corn milling process" used by most plants in Iowa such as Fairbanks, Iowa Falls, Steamboat Rock, Goldfield, Mason City and Lakota produce ethanol plus the Distillers Grains, Distillers Solubles, and some are producing Distillers Bran.

Dairy herds will usually buy Corn Gluten Feed either a wet (40% dry matter) or a dry (90% dry matter) product or they will buy Distillers Grains either with or without the solubles added back in and it could now be purchased as Wet Distillers Grains + Solubles (WDGS) (30% dry matter), Dry Distillers Grains + Solubles (DDGS) (90% dry matter), or a modified (MDGS) (50% dry matter).

The major differences between the Corn Gluten and Corn Distillers are that CGF has about 3% fat versus 9-12% in Distillers Grains. CGF is also lower in protein, 20 versus 31-36% in DG and the protein in DG is about 50% by-pass versus 25% in CGF. However the newer "bran" products being produced by some dry mill process ethanol plants are 10 to 12% protein, and only 3% fat. This is a result of removing the corn germ which contains considerable fat and protein. The fiber in both CGF and DG is very digestible which is part of the reason these products are high in energy.

Can we feed distillers grains to dairy cows and if so, how much? That is the prime question on dairy

farmer's minds. We have fed the co-products of the ethanol industry to ruminants for over 100 years. However it wasn't until recently that there became enough of them available to a majority of livestock operations.

Recent work at South Dakota State University has shown that we can feed at least 20% of the cow's dry matter as Distillers Grains. For a Holstein cow milking 70 pounds this would be about 9.6 pounds of dry matter from Distillers Grains or 32 pounds of WDGS, 19 pounds of MDGS or 10.7 pounds of DDGS. But because of the high fat content of the DG we must keep the effective fiber at a reasonable level in the ration or we will have a severe butter fat depression. I usually insist that a milking cow ration with near 20% of the dry matter coming from distillers contain at least 19% acid detergent fiber (ADF) and 30% neutral detergent fiber (NDF). About 80% of the NDF should be effective NDF.

This level of Distillers Grains will usually fill the need for phosphorous so there is no need to add that mineral. The ration should be under 0.5% sulfur. The requirement of milking dairy cows is 0.2% sulfur.

We have seen good success using WDGS or MDGS in heifer rations when mixed with processed corn stalks or low quality hay. The DG contains the protein, fat and phosphorous the corn stalks lack. South Dakota has completed trials on growing dairy heifers with excellent results for weight gain and growth in height (stature). We usually start with 30% WDGS and 70% corn stalks plus the needed vitamins and minerals. But give us a call to help you develop a ration that is specific for your situation.

Distillers Grains cut one producer's heifer feed cost in half. So it is well worth looking into.

Can DG be used for dry cow diets? I am sure they can, but I am concerned about over feeding fat and protein. Again, we need to develop a ration that is specific for the feeds you plan to use.

On behalf of the Iowa State Dairy Team we wish each of you a very Happy and Prosperous NEW YEAR!

"May each of you find joy, happiness and peace in your lives."

NE IOWA DAIRY DAYS 2007

1. Dates and locations:

January 29 Avalon Supper Club, Rickardsville
January 30 American Legion Hall, Ryan
February 5 Dairy Foundation Center, Calmar
February 6 KC Hall, Elma
February 7 4-H Building, Fairgrounds, Waverly

2. Agenda: Times / topics / presenters

9:30 Registration / Refreshments / Exhibits

9:55 Welcome / announcements

10:00 Nutrition and mastitis – “food for thought”

by Leo Timms, ISUE Dairy Specialist. A food pyramid for udder health – vitamins, minerals, antioxidants but what else?

10:40 High K soils / Low Mg rations = Cow

Failure by Dale Thoreson, ISUE Dairy Specialist

Find out how soils can impact feed nutrient quality and animal health and performance.

11:10 Bioeconomy’s challenges to dairy

nutrition and farm profitability by Robert Tigner,

ISUE Farm Mgmt. Specialist Risk management

tools and strategies to maximize profit and ROI

given the opportunities and challenges of the

bioeconomy in IA.

NOON Lunch – Commercial Exhibits

1:00 Using dairy records to evaluate your on

farm udder health program by Leo Timms, ISUE

Dairy Specialist SCC /linear score / new infections/

CMT – Piecing the puzzle together to optimize udder

health.

1:40 Strengthening your farm infectious

disease “FIREWALL” by Chris Mondak / Leo

Timms, ISUE Dairy Specialists. New Biological Risk

Management tools to prevent/control disease

transmission on your dairy.

2:20 Corn co-products in heifer and dry cow

rations by Dale Thoreson, ISUE Dairy Specialist.

Learn the latest research and information regarding

levels / blends/ costs / benefits / and risks .

3:00 Closing comments Commercial exhibit

viewing until 3:30 pm. **Registration fee is \$10** (covers meals / proceedings). Vouchers may be available from local agri-service providers or veterinarians. Participants can bring feed samples (TMR, silage, grain) for particle size analysis. (These 3 points are on last inside panel of last year’s brochure for your reference.

NW Iowa Dairy Calendar

Jan

19-20 Women in Denim Conference – Buena Vista University, Storm Lake – 800-242-5022

Feb

1 I-29 Corridor Dairy Meeting – NWICC - 11am – 3:30pm, 712-737-4230

1 Annie’s Project – Financial Planning for Women in Agriculture (Evenings Feb 1, 8, 15, 22, and March 1, 8 –Location TBA)

16-17 Ag Link Getaway Weekend Seminar – Part II, Marina Inn, S. Sioux City

20-21 Dairy Focus Groups – Cherokee and Sac/Carroll area producers

28 “What’s New in Dairy Facility Designs & Options?” – Update for Builders, Bankers, & Producers – NWICC, 10:30am – 3:30pm

March

21-23 Central Plains Dairy Expo – Sheraton Convention Center – Sioux Falls -218-236-8420

20-23 PDHGA National Convention – Burlington, Vermont - 877-434-3377

30-31 Dairy Challenge – National Competition- NW Iowa & SD locations

For more information, contact Chris Mondak, Extension Dairy Field Specialist, 712-737-4230

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Are We Headed for Lower Milk Prices?

By Robert Tigner, ISU Extension Farm Management

As of late December, 2006 Chicago Mercantile Exchange milk futures continue to trade sideways at price levels that are very strong. The last few months of 2006 have been challenging to prognosticate. However, several factors are important in making milk price risk decisions as alluded to below.

Milk cow numbers peaked in June 2006 and began declining. That decline lasted three months. During October and November, milk cow numbers have increased compared to the prior month. And, milk cow numbers for both months were higher than one year earlier.

Milk per cow had large rates of increase early in the year. Then, the summer of 2006 had poor rates of increase. Heat across the US, especially in California and New Mexico, toned down cow productivity. Cow productivity probably will not show much more improvement in milk than its current 1.5%. Historically that increase is near 2%.

Feed prices, at least corn grain, has changed a lot since mid-September. Many dairy operators will not see the full impact of corn prices over \$3 per bushel. Many produce their own feed and some will have feed prices, corn silage and grain locked in at lower levels. By-product feeds are very common for a large area of the US and ethanol by-products are going to the areas that don't have ready access via rail. The full impact of feed cost increases are not yet likely to be felt. That may change after the 2007 growing season.

Demand for dairy products has shown good growth in 2006, up 2.5% in some instances. A much weaker economy does not appear to be coming soon. But, interest rates are likely to increase in early 2007. The Federal Reserve has continued to talk about inflation as a concern. A December 19th Labor Department report indicated wholesale prices rising about four percent more than anticipated for November, 2006. Housing construction was also higher but new house permits are lower again.

Looking at current prices offered, all months except January and December are in the top 16% of historic price range. The January and December milk prices are not far from these prices. **The risk for dairy producers now is lower milk prices.**

The probability for even higher milk prices is much smaller than lower milk prices.

At least one dairy cooperative offers a minimum price contract which gives a floor and still allows for dairy producers to capture higher milk prices if they occur. Talking with your milk buyer now to find ways to reduce price risk is a way to avoid the cash flow fix some dairy producers experienced this summer.

Reed Canarygrass and Kura Clover for Pasture and Forage Mix

By Larry Tranel, ISU Extension Dairy Field Specialist

Dairy producers looking for more persistent hay or pasture stands that produce high amounts of milk per cow and per acre of pasture might consider a reed canarygrass and kura clover mixture. When alfalfa winterkills, these species will still tend to be there, according to Dr. Ken Albrecht, UW-Madison. Over the past nine years, both species have survived when ice sheeting, short term flooding, open winters and record low rainfalls took their toll on many other forage crops.

Kura clover has high feeding value. Bud stage alfalfa has 40% NDF. Cuttings have shown kura clover to have 30% NDF and reed canarygrass 45-50% NDF when harvested for hay. A 50:50 mixture of the two forages can equal what you can get from alfalfa. Cattle fed reed canarygrass-kura clover silage in total mixed rations produced as much milk as cattle fed bud-stage alfalfa silage, according to Albrecht. He also notes that reed canarygrass-kura clover silage contained much more fiber than the alfalfa, but grass fiber is more digestible than alfalfa fiber resulting in similar intakes and performance.

If growing for silage and caught in a rainy period, the feeding value of all grasses will change more quickly than alfalfa, losing more quality per day.

So, if you want a more permanent forage for hay or pasture, one that will last eight years or more if you want, consider a mixture of reed canarygrass and kura clover at 8-10 pounds each, respectively, per acre in a tilled seed bed or no-tilled in a Roundup killed field, if you have a good drill. Both species are very slow to establish. For more information on reed canarygrass log on to:

<http://www.extension.iastate.edu/dairyteam/grazingpasture.html>

For more information on kura clover, log onto:

<http://www.extension.iastate.edu/dubuque/info/Dairy+Publications.htm>

Competing for Corn

adapted from Jim Linn and Mary Raeth-Knight
University of Minnesota Extension

Can the dairy industry compete for corn and if not, what alternatives are there? Dairy producers are like ethanol plants and buy corn for starch. One alternative for corn grain is to feed more corn silage and fewer legumes and grass forages. This is already the trend in the top six milk producing states. In contrast to alfalfa or grasses, corn silage provides a good source of fiber along with starch and therefore decreases the amount of additional grain required in the diet.

Byproducts are plentiful but there are limitations to the amounts that can be fed. The first limitation is that most byproducts are low or devoid of starch (table). Distillers grains, for example, have approximately the same energy value as corn, but it comes from fat, protein and some fiber, not starch. The starch is consumed in the production of ethanol. Similarly with the byproducts from the food industry, it is the starch or sugars that are removed. Thus, most byproducts available are high in protein and moderate in fiber with little or no starch. If a byproduct also has starch, like potato waste, it will also be of interest to the ethanol industry.

The second limitation related to feeding byproducts is that they are two to three times higher in phosphorus content than corn. In some dairy rations already, feeding any amount of byproducts increases the total phosphorus content in the ration well above individual animal requirements and acceptable environmental limits.

The third limitation is the high protein content of byproduct feeds as most contain over 20% or 2 to 6 times the protein content of corn. If byproducts are going to replace corn in the ration, it will be difficult to formulate rations below 18% crude protein when alfalfa is the majority of the forage in the ration. The trend in dairy today is to feed lower protein rations and improve the efficiency of converting nitrogen or protein in feed into milk. Feeding high protein rations lowers efficiency resulting in more nitrogen excretion in the urine and manure. This extra nitrogen will make it more difficult to comply with odor and air quality standards.

In summary, finding a low cost substitute for corn in dairy rations doesn't seem very feasible. Without starch in the ration, it will be difficult to achieve high

milk production. The high protein and high phosphorus content of most byproducts will limit their use, especially in rations high in alfalfa. The trend for increasing corn silage in dairy rations will likely be the best alternative. It will provide some starch and be low in protein to take advantage of the many high protein byproduct feeds available. A ration of corn silage, soybean meal and distillers grains may be tomorrow's most cost effective high production ration.

Average Starch (S), Crude Protein (CP) and Phosphorus (P) content of by product feeds:

(as fed)	%S	%CP	%P
Corn	62	9	0.27
Almond Hulls	3	5	0.10
Beet Pulp, dry	2	9	0.10
Brewer's Grains	10	22	0.60
Canola Meal	2	41	1.00
Citrus Pulp	1	7	0.12
Corn Gluten Feed	12	24	1.00
Cottonseed	1	24	0.60
Distillers Grains	10	28	0.70
Rice Bran	22	13	1.60
Soybean Hulls	1	10	0.10
Wheat Midds	21	19	0.80

Building Your Own Low Cost Milking Parlor

by Larry Tranel, ISU Extension Dairy FS

Many dairy producers are attempting to build their own low cost milking parlor. This will be a topic of our next newsletter along with more parlor tours in NE Iowa. However, if in the mean time you are considering building your own low cost parlor, consider logging on to the website at: <http://www.extension.iastate.edu/dubuque/info/Dairy+Publications.htm> and scroll down to Powerpoint presentations. Then, click on Building Your Own Low-Cost TRANS Iowa Parlor Part I and Part II for pictures and steps of how one might build one.

1) [Building a Low Cost TRANS Iowa Parlor - Part I](#)

2) [Building a Low Cost TRANS Iowa Parlor at the NE Iowa Dairy Foundation's Grazing Center -- Part II](#)

One the same page, scroll under Fact Sheets:

3) Tranel, Larry "[TRANS Iowa Low Cost Milking Parlor](#)", 2006. Remodeled Dairy Parlors Factsheet

What Can You Afford to Pay for a Dairy Farm?

Land price gains spark considerable interest in just how much dairy producers or other investors can pay for a dairy farm. In 2006, some farms returning to farm use have surpassed prices of \$5,000 per acre in Iowa, Wisconsin and Illinois. Can dairy producers afford to pay that much for land?

Dairy producers need to determine probable returns at various purchase prices with interest and equity costs included. Producers or investors with the lowest costs of financing can afford to pay more than those who borrow at higher interest rates. Then, dairy producers need to determine if they can cash flow the purchase with principal and interest payments in a timely manner. So, profit and cash flow are both important to the possible purchase of a dairy farm.

The annual appreciation in land values above general inflation, in addition to interest rates and net return to land are all very important factors necessary in determining if a dairy farm purchase is right for an investment.

But, just because cash flow and equity make it possible, profitability may say otherwise. In order to make a determination based on so many variables, consider the following Dairy Farm Value Calculator.

Dairy Farm Value Calculator Using Rental or Actual Income Approach

In order to determine the value of a dairy farm, it is necessary to determine the incomes and expenses associated with the farm. Using a rental or an actual income approach, one can determine an estimated net income (gross income minus gross expenses) from the fixed assets on the farm. Once this is determined, a farm value can be estimated using the net income divided by the interest rate (or cost of capital rate).

To begin with, one would take a house on the farm in question, for example, and determine its annual value if rented or its opportunity value to the owner of buying a house elsewhere. The same is true for tie or free stall barns, silos, outbuildings and land. Each asset has a certain rental or other income

value to a potential buyer (some assets could be a liability, i.e. an old silo to be torn down). Thus, the prospective owner would try to value the annual income from each of the prospective assets.

Once annual incomes from fixed assets are determined, the next step is to determine the fixed expenses against those assets. For example, the DIRT 5 of depreciation, interest, repairs, taxes and insurance would be the main ones. However, interest or equity charges should not be included at this point. Labor and management should be included as it takes time to manage the farm's fixed property, whether you run the farm or rent it out.

Once fixed expenses are subtracted from fixed incomes yielding a net return, this net return can then be divided by the prospective interest or cost of capital rate. This equation yields a value of the farm and if divided by number of acres, can yield a value per acre as well.

However, to get a picture of what can be truly be paid if we are banking on a certain annual appreciation of the asset, the interest rate minus the annual expected appreciation rate divided into the net return would give the highest value that can be paid after appreciation is accounted for (if it cash flows and is equity wise). The spreadsheet on the next page illustrates this procedure.

Please note that risk is often the biggest variable and is inherent with a dairy farm purchase. That risk includes liability, real estate value declines, weather damage and changes in net returns and interest rates. Plan to manage risk.

In using this Dairy Farm Value Calculator, please understand that a house and the buildings are put onto the value of an acre of land since a dairy farm is often sold on a per acre basis. With alternate calculations, one could zero out the value of the house and buildings to get truer picture of the value of the land only. Also, note that the approach is mixing personal assets (house) with farm business assets. Values are in the present, so the after appreciation values include anticipated appreciation over and above inflation in the general economy.

***ISU Extension Fact Sheet LT-06-06
by Larry Tranel, Dairy Field Specialist, Iowa State
University Extension, NE and SE Iowa***

Iowa State University and U.S. Department of Agriculture Cooperating.
Extension programs are available to all without regard to race, color,
national origin, religion, sex or disability.

Dairy Farm Value Calculator Using Rental or Actual Income Per Acre Approach
 by Larry F. Tranel, Iowa State University Extension

Fixed Farm Assets	Units	Unit Name	Annual Income/Unit	Annual Owner Income	Instructions: Input data in cells with blue fonts only. Land acres can only be entered in rows 27-30. Column F is auto calculated based on input of colums C&E. Annual Income minus Expense yields Return to Owner - F44. Net Return to Owner divided by Interest or Capital Rate Yields Value of the Farm. Value of Farm divided by sum of acres yields value per acre. Net Return to Owner divided by (Interest - Annual Rate of Appreciation) yields Value of Farm after Appreciation.
House	1	house	\$6,000.00	\$6,000	
Outbuilding 1	2400	sq. feet	\$0.20	\$480	
Outbuilding 2	600	sq. feet	\$0.25	\$150	
Outbuilding 3	300	sq. feet	\$0.20	\$60	
Outbuilding 4	1	all	\$50.00	\$50	
Outbuilding 5	1	all	\$0.00	\$0	
Dairy Cow Housing 1	87	stalls	\$120.00	\$10,440	
Dairy Cow Housing 2	24	stalls	\$100.00	\$2,400	
Dairy Cow Housing 3	600	sq. feet	\$0.75	\$450	
Milking Parlor	20	stalls	\$0.00	\$0	
Silo 1	320	tons	\$2.00	\$640	
Silo 2	180	tons	\$2.00	\$360	
Silo 3	0	tons	\$0.00	\$0	
Heifer Housing 1	0	stalls	\$0.00	\$0	
Heifer Housing 2	12	stalls	\$60.00	\$720	
Heifer Housing 3	800	sq. feet	\$0.75	\$600	
Grain Bin 1	1200	bu.	\$0.18	\$216	
Grain Bin 2	0	bu.	\$0.00	\$0	
Other 1--haybarn	2000	bale	\$0.05	\$100	
Other 2-super calf hutch	8	head	\$15.00	\$120	
Other 3	0	head	\$0.00	\$0	
Land Parcel 1	120	acres	\$175.00	\$21,000	
Land Parcel 2	80	acres	\$150.00	\$12,000	
Land Parcel 3	22	acres	\$15.00	\$330	
Land Parcel 4	0	acres	\$0.00	\$0	
Annual Income to Owner based on Rental or Actual income				\$56,116	

Fixed Expenses	\$ Units	Unit Name	Annual Expense/Unit	Annual Owner Expense
Building Depreciation 1	\$50,000	dollars	5.00%	\$2,500
Building Depreciation 2	\$12,000	dollars	5.00%	\$600
Repairs	\$2,500	dollars	100.00%	\$2,500
Taxes	\$5,000	dollars	100.00%	\$5,000
Insurance	\$2,340	dollars	100.00%	\$2,340
Other 1	\$0	dollars	0.00%	\$0
Other 2	\$0	dollars	0.00%	\$0
Labor and Management	\$2,000	dollars	100.00%	\$2,000
Annual Expense to Owner from rental or actual expense				\$14,940
Net Return to Owner				\$41,176

7.50%	Median Interest Rate			Value after Appreciation
0.50%	Rate Increments			
		222 acres	After Appreciation	Value after Appreciation
Interest/Capital Rate	Value of Farm	Per Acre	Value of Farm	
8.50%	\$484,424	\$2,182	\$748,655	\$3,372
8.00%	\$514,700	\$2,318	After Inflation \$823,520	\$3,710
7.50%	\$549,013	\$2,473	3.00% \$915,022	\$4,122
7.00%	\$588,229	\$2,650	Appreciation \$1,029,400	\$4,637
6.50%	\$633,477	\$2,853	Annually \$1,176,457	\$5,299