



Chris Mondak



Larry Tranel



Jenn Bentley

Robotic Milking Becoming a Reality!

The past year has really set the stage for a dramatic change in how we milk cows. There are plans for over 28 robotic milkers to be installed on 13 different dairy farms in the near future, some already in.

This technology is surely worth looking at but due to high investment costs, variable milk production responses and possible cash flow issues, robots will not fit every farm. Plus, the technology is changing rapidly along with our knowledge of what's happening to dairies who have incorporated them. To learn more, join us for dairy days this year for an update of robotic milking technology

Dairy Days coming to NE and SE Iowa

Please check dates, times and locations for dairy days inside this newsletter. The agenda is again on issues pretty pertinent to dairy farm profitability.

Chris Mondak Becomes Part of ISU Administration

For those in NW Iowa, Chris Mondak has accepted a position with ISU Extension Ag and Natural Resources programs. We are grateful to Chris for her great programming efforts and wish her well with her new position. Plans are to fill the NW Dairy Field Specialist position soon so we look forward to that becoming a reality. If you know of someone who you think would fit that position well, please check out the position at: <https://www.iastatejobs.com/applicants/jsp/shared/position/JobDetails.css.jsp?postingId=383871>

Vacant Position (currently recruiting)

ISU Extension Dairy Field Specialist, NW Iowa

Jenn Bentley and Larry Tranel

ISU Extension Dairy Field Specialists, NE and SE Iowa

Edited by: Larry Tranel

ISU Extension Dairy Team
"Bringing Profits to Life"

Should You Raise ALL your Heifers?

We are in a timeframe when many springing dairy heifers are being sold for 10%-30% below what it is probably costing to raise them. This begs the question: if you don't need them, should you be raising them?

Granted there are great reasons to raise your own heifers due to genetic and biosecurity issues even if you might be able to buy them cheaper. But, many producers are simply in the habit of always raising all their heifers and then either selling them as springing heifers or culling out other cows in the herd and improving the herd (maybe not a bad idea with present cull cow prices, either).

But, producers may want to consider selling the newborn heifers if they aren't needed in the herd to save some costs, especially feed. With the initial value of the calf at \$200-\$250, for example, and then adding the labor, feed and other costs, the total cost in many heifers is approaching \$2,000 per head (or \$1,750 without the initial cost of the heifer). So, it may be worth considering.

The last article in this newsletter takes the risk to establish "thumbrule" costs on raising heifers as they are constantly being asked for. Check it out!

What Does it Cost to Produce Milk?

As the end of the year closes in and tax preparation begins, please let us know if you would like to run a Dairy TRANS financial analysis on your farm for your 2011 data. The program is strictly confidential and will allow you to do a complete cost of production with breakdowns per cow and per cwt. to allow you to benchmark your operation with good goals. In addition, efficiencies per cow, per labor unit and per acre will also be calculated. There is no cost on your part to do the financial analysis.

Simply call us to schedule a Dairy TRANS appointment. We can almost guarantee you will be glad you did.

THE ISU EXTENSION DAIRY TEAM

itstartswith
EXTENSION
EXTENSION PROGRAMS BENEFIT ALL IOWANS

Dairy Field Specialists

- Jenn Bentley, 563-382-2949 jbentley@iastate.edu
- Larry Tranel, 563-583-6496 tranel@iastate.edu
- NW Iowa Vacant, 715-737-4230

State Dairy Specialists:

- Dr. Lee Kilmer lhkilmer@iastate.edu
- Dr. Leo Timms ltimms@iastate.edu
- Dr. Jan Shearer jks@iastate.edu

Iowa State University Extension programs are available to all without regard to race, color, age, religion, national origin, sexual orientation, gender identity, genetic information, sex, marital status, disability, or status as a U.S. veteran. Inquiries can be directed to the Director of Equal Opportunity and Compliance, 3280 Beardshear Hall, (515) 294-7612.

Cooperative Extension Service, Iowa State University of Science and Technology, and the United States Department of Agriculture cooperating.

Thanks to our newsletter funder:

THEISEN's Home-Farm-Auto

Check out their Ad inside!

Inside This Issue:

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Farm Management Specialist in NE

We want to take this opportunity to introduce Kristen Schulte as our new Farm and Ag Business Management specialist for northeast Iowa. The immediate area Kristen will cover includes 10 counties comprised of Allamakee, Chickasaw, Clayton, Delaware, Dubuque, Fayette, Floyd, Howard, Mitchell, and Winneshiek. Farm and Ag Business Management Specialists offer a variety of educational programs including those related to land leasing, land valuation, financial analysis, government programs, and risk management. In addition, Kristen will specialize in dairy economics and financial statements, budgets, and analysis.

Kristen is a graduate of Kansas State University where she received a Master's Degree in Agricultural Economics and Bachelor's Degree in Agribusiness. During graduate studies Kristen had the opportunity to work on projects relating to dairy profitability and benchmarking. Kristen is formerly from northwest Ohio where she grew up on the family dairy farm which included 80-100 milk cows in addition to raising all replacement heifers and feeder calves.

Kristen is currently housed in the Howard County Extension Office and is looking forward to meeting and serving the dairy industry in Iowa. Please feel free to stop in or contact Kristen with any farm and ag business management related questions you may have. Kristen's contact information is as follows:

Kristen Schulte
Howard County Extension
132 1st Ave West
Cresco, IA 52136
Office: 563-547-3001
Cell: 563-419-2790
kschulte@iastate.edu



Farm Succession Planning Coming to NE Iowa

The Farm Succession Workshop is a multi-generational event for exiting owners and spouses, and succeeding owners and spouses. The workshop will be conducted on two consecutive partial days to better accommodate rural families and provide time to initiate conversations and written plans.

This workshop will be held January 27-28 in Cresco. Registration for the workshop will open in December. Families interested in being placed on the mailing list or reserving a table for their family should contact the Howard County ISU Extension office at 563-547-3001 or visit www.extension.iastate.edu/howard

Join Us for NE Iowa Dairy Days at:

Jan 16th St. Peter's Lutheran Church 105 West 6th Street, Riceville
Jan 17th NE Iowa Dairy Foundation, 1527 Hwy 150 South Calmar
Jan 18th Civic Center, 200 1st Street NE, Waverly
Jan 31st Nuemann's Bar, 927 Main Street, Holy Cross

Feb 1st American Legion Hall, 210 Main St. Ryan
Feb 8th Chamber Building, 514 B Avenue, Kalona
Feb 9th-ISU Extension, 402 E. North St. Bloomfield

Dairy Days Agenda

"Maximizing Cover Crops' Value in Dairy"
Brian Lang / Mark Carlton, Extension Crop Specialists

"Calf Housing and Environment"
Jenn Bentley, Extension Dairy Specialist

"Dairy Outlook for First Half of 2012"
Kristen Schulte, Extension Farm Mgt Specialist

"Robotic Milking Systems-A Deal or No Deal for your farm?" Larry Tranel, Extension Dairy Specialist

"Dairy Quality Assurance—Perspective from the Iowa Beef Industry Council" Doug Bear/Leo Timms

"Precision Feeding for Productive Cows"
Lee Kilmer, Extension Dairy Specialist

ISU Extension and Outreach offering Annie's Project in NE Iowa

Annie's Project is designed to empower farm women to manage information systems used in critical decision making processes and to build local networks throughout the state. The target audience is farm women with a passion for business and involvement. Women will receive training for managing risk in the area of: production, marketing, financial, legal, and human resources.

This women's empowerment program will be offered in six sessions: Feb 16 & 23, March 1, 8, 22, 29. Classes will be held at the Northeast Iowa Dairy Foundation in Calmar from 6-9 PM. Cost of the program is \$75 per person and class size is limited.

For Program Registration and more information contact the Winneshiek County Extension Office at 563-382-2949 or email jbentley@iastate.edu
For other dates and locations in Iowa, visit Annie's Project website:

<http://www.extension.iastate.edu/annie/>

Need an Employee Handbook?

Whether your dairy farm has two employees or twenty-five, it is important to be consistent in communications with workers about expectations and conditions of employment. One tool that can assist in this task is a written employee handbook or policy document. Such a written document can be short and simple or highly detailed, depending on your needs. What could an employee handbook do for your farm?

Provide background information about your farm.

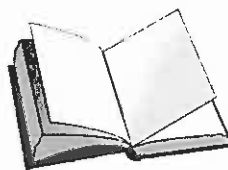
An employee handbook can be a tool to share information with your work team about your farm's history and background, as well as your values and vision for the farm. When employees know a little about the history of the farming operation, it helps them to understand the organization that they have joined. Hopefully, you have given some thought to your core values and vision for the future of your farm. Writing a farm mission statement could be the entire topic for another article – but, here's an example: *We are a family-owned and -operated dairy farm. We value rural life and are committed to keeping our rural community vital. We strive to care for the environment, use good animal care practices, and produce the highest quality milk for dairy consumers.* This kind of a statement helps your workers to understand what is important to you in your farming operation. Whatever your farm vision, share it with your employees.

Outline work rules, standards of conduct, and other information that lets employees know what is expected of them. Most of us like to know what is expected of us. New employees have questions as basic as what to wear, where to park, where to eat lunch, and the location of restrooms. Workers like to know what their work schedule will be or where it will be regularly posted. Basic information about safety policies and training can be outlined in an employee handbook. Do you have other policies, such as "no smoking"? Think about some of the most "frequently-asked-questions" on your farm – and that information might well be outlined in an employee handbook.

Provide information about pay and benefits of working at your farm. Workers like to know when and how often they will be paid. They may wonder if they will have the opportunity to earn a raise or bonus. If you offer any benefits, the employee handbook is the place to outline those details. Even benefits such as the opportunity to obtain farm-raised meat could be mentioned in the employee handbook. Employees like to know how and when their work will be evaluated and the employee handbook is a good place to share this information.

Confirm information about the legal relationship with the employee. The law in Iowa (as in most states) is that the employment relationship is "at-will." Be sure that your employee handbook does not create a contract with the employees. In fact, it is recommended that employee handbooks contain clear a clear statement that employment at will is the policy of your farm. Here is a sample statement: *Our Farm does not offer guaranteed employment. Either the Farm or the employee can terminate the employment relationship at any time, with or without cause, with or without notice. This is known as "employment at will." This employment at will relationship exists regardless of any other written statements or policies contained in this Handbook or any other documents or verbal statements. Also, while we may choose to discipline employees in an attempt to improve work performance when necessary, the Farm is not obligated to do so.*

While you can use posters to provide certain information that may be required by law, an employee handbook is another good place to do this. Have employees sign a simple document stating that they have received the employee handbook and reviewed all the policies contained in it. Then keep the document on file, just in case you ever need to prove that the employee received the written policy.



Do not use the employee handbook to replace good communication practices.

Remember that nothing can take the place of good interpersonal communication in the workplace. New employees need orientation and training, and seasoned employees need updated training, motivation and feedback. An employee handbook is a good reference tool and guideline. But it should not take the place of regular farm meetings, training and face-to-face feedback – both positive and constructive.

Looking for more information on farm employee handbooks? If you are considering writing or updating an employee handbook or policy document, resources are available. Go to the AgDecision Maker website and print a copy of File C6-58: Checklist for Iowa Agricultural Employers – available at www.extension.iastate.edu/agdm/wholefarm/html/c6-58.html A list of links and resources can be found there which include discussions and templates for farm employee handbooks. Have your document reviewed by a legal professional who is experienced in employment law. Future articles will continue to address other farm employee management issues.

*Melissa O'Rourke – ISU Extension Farm & Agribusiness Management Specialist
morourke@iastate.edu 712-737-4230*

Dairy Outlook Overview by Kristen Schulte *ISU Extension Farm and Agribusiness Mgt Specialist*

The future of the dairy industry is a time filled with excitement and animosity due to commodity prices, unknown global economic status, and new technologies available. Looking ahead, expected suppressed milk prices and maintained high feed commodity prices will create tight margins for dairy producers. Margin management and proactive risk management will be important for dairies to remain profitable if conditions hold.

Milk Supply: Production was at just less than 193 billion pounds last year and is expected to increase 3 billion pounds by the end of 2011. This increase has come by means of increased efficiency and number of cows in the Western states. National production is just under 164 million pounds for January through October, 1.6 percent ahead of production during the same time period for 2010. 2012 production is expected to continue to increase to over 198 billion pounds. Total milk production in Iowa for 2011 lags 2010 production through October by 0.19 percent.

The total number of milk cows in the U.S. is at 9.2 million head at the end of July, an increase of 0.55 percent in 2011. Replacement heifer inventory in the U.S. is at 4.2 billion head as of July 2011, up 150,000 from a year ago. A larger percent of these heifers will be ready to enter to cow herd in the next year.

However, USDA-ERS projects dairy cow inventory to reduce by 15 thousand cows; this can be contributed to a bleak dairy profit outlook and strong beef prices. National rolling herd average (RHA) is at 21,305 pounds; rolling herd average per cow in Iowa equates to 20,751 per cow. As of the end of October, RHA for Iowa has increased by 2.4 percent (494 pounds) from 2010 to 2011.

Increased heifer inventory will continue to allow for increased culling and management in herds across the U.S. This combined with a strong beef slaughter prices may result in a stable to increasing dairy cow herd inventory at 9 to 9.25 million head. Dairy producers continue to be more efficient in producing milk as pounds per cow has increased from year to year and this trend is expected to continue.

Milk Product Demand: Demand has been stronger for U.S. exports over the past year due to a growing middle class and reduced production from leading dairy countries. Except for 2009, global exports have increased since 2002 with the primary products being milk powder, whey, and cheese. The growing middle class in Asian countries offer increased demand for dairy products; however New Zealand and Australia are increasing milk production after a period of dry

weather which resulted in decreased production. An additional aspect to watch for international demand is the value of the dollar. With the dollar gaining strength, export demand may soften.

Domestic fluid milk and cheese consumption has softened in 2011; however, yogurt consumption, especially Greek yogurt has increased. Commercial domestic use has increased for 2011 from 2010 on both a skim-solid and fat basis; 2012 milk use for commercial products is expected to increase again.

The expected increase in global milk supply combined with economic uncertainty can result in a decrease U.S. export demand; however, the growing middle class may reduce the impact. In the U.S., with the economy remaining in a sluggish state, dietary and nutrition promotion along with innovation of new products is important to recover loss in consumption of some products.



Dairy Profitability: The U.S. average All Milk Price was at \$19.90 and at \$21.00 per hundredweight for Iowa in October. 2011 increase in milk price has primarily been led by the heightened activity on the cheddar cheese market which drives the protein price component in milk pricing. This activity was stimulated by global market demand and tightened supply over the summer months of 2011.

Commodity price markets have been extremely volatile over the past year, and feed input prices have followed suit. According to USDA-ERS, corn crop will be the largest on record, but total projected ended stocks for corn are expected to be at only 6.7 percent of total expected use. This tightened inventory will help to hold corn prices around five to six dollars into 2012. Due to extreme weather variability over the summer months between regions of the U.S., hay quality and availability have influenced prices for supreme quality dairy hay to reach the \$200 mark and are expected to remain if not increase into spring 2012. Increased feed, energy, and labor prices will continue to pinch total profit margins in 2012.

Milk price is expected to remain in the 16 to 17 dollar range going into 2012. Increased production with stable to variable demand also points to a decrease in milk price in the next year. With 2011 resulting in high commodity prices, there is a high probability that the market will cycle and lower prices with tightened margins will be in the future for 2012 or 2013. Margin management, through financial and production management, is pivotal moving forward to protect dairy producers and their operation.

Pregnancy Rate (PR)..... What Does it Mean to Your Herd?

by Ron Lenth, ISU Extension, Bremer County

Before reading any further, either go to your DHIA sheet and find your Pregnancy Rate, or use your computer to print out your **Report 126-Pregnancy Rate Summary**. What is it....16?...22?...13?...24? Now that you have checked, read on. This gives you the percentage of cows eligible to become pregnant in 21-day periods. This is dependent upon the percentage of breedings (CR) that result in a pregnancy and the rate of insemination submission (HDR). Data presented at the 2010 Four State Dairy Nutrition and Management Conference at Dubuque, indicated a survey of database of PR's running in the 14-16% average.

Factors contributing to your PR level include:

- Heat detection efficiency and accuracy
- Following all synchronization protocols and making sure every animal is kept on schedule
- Accurate semen handling and site of deposition on every breeding
- Reviewing status of every female in the breeding group for status...no "Lost" cows
- Recording all management events...breeding/pregnancy or open status
- Your VWP (Voluntary Waiting Period).....are you following it? If you are going past it, your PR is understated—the reverse is true if you shorter.
- Is one person in charge of the breeding program.....too often, if the answer is "everyone", things can easily get overlooked.

Data from Michigan on DHIA herds, via the Metrics systems found the PR average was 17%, with a deviation of +/- 5.6%, so about 2/3rds of the herds had PR between 11.4 and 22.6—that means 1/3 were over or below that range. The Michigan folks shared this graph on herds with PR over 22 or greater and all herds:

	All DHI Herds	Herds PR22>	
Number of Cows-Avg.	280	631	
Rolling Herd Average-Milk	22,762	25,345	(+2583)
Days Open	156	121	(+35)
Days to First Service	93	76	(17)
Conception Rate-(1 st Service)	43	43	-0-
Heat Observed/Submission Rate%	43	61	(18)

Major differences on milk production, days to first service and percent of heats observed/breeding submitted....all add up to more income, less involuntary culling, and less days open.

What's your PR...and where do you want it to be in 6-12 months. Visit with your management team.....your vet, breeder/AI rep/ nutritionist/ herd manager and personnel. You're all in this together.

Manure Applicator Certification Requirements

Angela Rieck-Hinz, Extension Program Specialist, Iowa State University Extension and Outreach
amrieck@iastate.edu or 515-294-9590

With the increasing number of beef and dairy operations housing animals under roof, this is a reminder that if you have more than 500 animal units in confinement you must meet manure applicator certification requirements to land-apply manure coming from these facilities. It does not matter if the manure is liquid or solid. If you have 500 or less animal units in confinement, or you have an open feedlot, manure applicator certification requirements do not apply. This means if you have more than 500 head of beef cattle, 357 head of mature dairy cows, 1,250 finishing hogs or the equivalent numbers of poultry in confinement housing you need to become certified. Certification is accomplished in one of two methods. You can attend the required 2 hours of annual training at your local county extension office, or you can make an appointment at the local DNR field office to take the certification exam.

A list of 2012 training dates offered by ISU Extension and Outreach is available at:
<http://www.agronext.iastate.edu/immaq/certification/cofnfdates.html>. For more information contact your local county extension office or visit the Manure Applicator Certification Web page at:
<http://www.agronext.iastate.edu/immaq/mac.html>

Artificial Insemination School, December 13-15
NICC is hosting an artificial insemination school at the NE IA Dairy Foundation Center. 9 AM - 3 PM, Registration \$149. Call 1-800-728-2256 Ext. 399 to reserve your spot or register online at:
www.nicc.edu/continuinged



Want to subscribe to the ISU Dairy Team **monthly, electronic newsletter?**

Once a month, you will receive a short newsletter of resources and information relevant to the Iowa Dairy Industry. Email:
jbentley@iastate.edu to start receiving it today!

High-Quality Forages Reduce Feeding Costs

by Jim Paulson, University of Minnesota

It appears rather certain for 2011 and perhaps longer, that livestock feed will be relatively high-priced. Ruminant animals have the advantage of using some feedstuffs, like forages, that are not used in human diets and not in high demand for bio-fuels either. The logical thing would be to utilize as much forage as possible while still maintaining a productive level acceptable to the producer. Within forage sources - alfalfa, grass, corn silage, small grains or straw - it is an advantage to have higher quality forage to feed. But just what is higher quality forage and why is that the goal?

With regard to animal requirements, whether the animal is growing or producing milk, it has a set of requirements for that activity. These are in amounts per day of energy, protein, minerals, vitamins and fiber. But more specifically, there are amounts of metabolizable energy (ME), metabolizable protein (MP) and NDF. Metabolizable energy and protein is what reaches the small intestine with the potential to be digested and absorbed. Metabolizable protein is ~60% MP from the rumen microbes and 40% dietary proteins not digested in the rumen. There are further constraints with NDF - there is a minimum amount needed each day as forage NDF to provide an amount of effective fiber and a maximum amount so it does not limit dry matter intake (DMI). Sources of ME are starch, digestible NDF and fats.

Protein content of forage is influenced by species and relative maturity. Because protein is expensive to provide in feed, immature forage is often preferred, usually alfalfa, to provide a source of crude protein (CP). Unfortunately, alfalfa can be too high in soluble protein and end up wasting protein when it is converted to non-protein nitrogen in the rumen and not utilized by rumen microbes. Alfalfa, even immature alfalfa, is higher in lignin and thus lower in NDF digestibility or NDFD, than other forage species like grass or corn.

In recent years, grasses, especially high quality grasses, are once again being considered as forage for dairy animals. Grasses typically are lower in CP than alfalfa at similar maturities. However, they have a role in balancing the amount of soluble protein in alfalfa and the amount of starch in corn silage while providing NDF and greater NDFD. Lignin content of grasses is typically about half that of legumes which allows increased digestibility of the NDF. Grasses have been criticized in the past as poor forage for dairy animals because they were higher in NDF than legumes and were unjustly discounted in the RFV

formula. With the advent of Relative Forage Quality index (RFQ), grasses are valued because of their higher NDFD.

Grasses are slower to digest, which provides a more effective fiber mat. However, they are more completely digested than legumes. This eliminates the need for addition of straw to diets of lactating cows.

Corn silage provides less CP per unit of forage but excels in energy content due to starch content and digestible DM and NDFD. The forage portion can be higher in NDFD than alfalfa as well as the grain and cob portion, which is highly digestible. Corn silage also brings consistency and yield potential to a forage system. Within corn hybrids, corn breeders are identifying certain varieties that are referred to as silage specific. These varieties are above average in NDFD in forage portion, have high DM yields and may have a softer endosperm in the corn. An extreme example for NDFD is the BMR hybrids. Although often lower in total DM yield, yield of digestible NDF may be greater than other hybrids.

In the future, producers will likely need to increase the amount of forage in diets fed to dairy animals and other ruminants in order to save money while maintaining productivity. This can be done by combining different species of high quality forages. Mathematical models will be used to better understand the combinations which will accomplish that goal. Evaluations may need to be shifted to yields of digestible NDF and CP that will yield the greatest ME and MP in the animal. This will be in addition to the many other management practices already used while still relying on adequate rainfall and good weather at harvest to maximize yields and minimize losses.

Tri-State Robotic Milking Seminar

Where: Belmont Convention Center, Belmont, WI at intersection of Hwys G & 151
When: Wednesday, March 14, 2012

Speakers: **Barn Layout and Design for Robots**
Dr. David Kammel, UW-Extension



**Economics of Robotic Milking
Management of Robotic Milking**
Dr. Larry Tranel, ISU Extension

Producer Panel

Time: 10:30am – 2:30 pm
Cost: \$15 per person
Register: Call Larry Tranel at 563-583-6496 or
Dave Wachter at 608-723-2125.

O'Rourke is Farm & Agribusiness Management Specialist in NW Iowa

We welcome Melissa O'Rourke to ISU Extension. Melissa's background has revolved around agriculture, education and the law. She brings together these three areas of expertise to assist dairy and other agricultural producers in a wide range of areas. This includes land tenure and leasing issues, along with helping family dairy operations to plan for the future – both in terms of growth as well as transitioning to the next generation of operators.

One of Melissa's particular areas of interest is in agricultural employment. She is interested in further research regarding the factors that provide for effective recruitment, hiring, training, motivation and development of farm employees. This includes management practices as well as correct legal practices. Melissa has significant background in immigration law and can assist operations with questions about hiring immigrant workers. Melissa has also authored the Checklist for Iowa Agricultural Employers found on the Ag Decision Maker website at www.extension.iastate.edu, File C6-58.



Melissa has a B.S. from Illinois State University, an M.A. from the University of Minnesota, and a J.D. from the University of South Dakota School of Law. She is admitted to the Iowa, South Dakota and Nebraska bars. Melissa and her husband have raised registered Toggenburg and Nubian dairy goats since 1994.

Melissa can assist you with farm or agribusiness management issues and can be reached at:

ISU Extension & Outreach – Sioux County Office
400 Central Ave NW Orange City IA 51041
Office: 712-737-4230 email: morourke@iastate.edu

I-29 Dairy Conference Set for February 8-9, 2012 in Sioux Falls, SD

Iowa dairy producers might consider attending the 7th Annual I-29 Dairy Conference to be held in Sioux Falls at the Best Western Ramkota Hotel. The 2012 conference theme is Resilient Sustainability: Global Dairy Issues, Now and in the Future.

The conference begins with registration and exhibits on the afternoon of February 8. That evening's social and dinner will be highlighted with a keynote address

by Stan Erwin from Dairy Management speaking on "Global Issues Facing Your Future." Sessions on February 9 will include an interactive session on interpreting sustainability.

A conference highlight will be sessions by Neil Baker, the 2010 Farmer of the Year from Sommerset, England. Baker will give conference attendees a glimpse of the future with his presentation on Dairy Sustainability in Europe. Baker has grown a 1000-cow dairy of which one-third of the milk is used for cheddar cheese production. He sets high goals in Key Performance Indicators with a focus on health standards. Baker will share a second session on "How We Do It Across the Pond."

Research dairy scientist David Casper will lead producers into the future discussing how we will feed cows in the future on \$10 corn and \$200 oil. Following this theme, Marin Bozic from the University of Minnesota will provide an overview of risk management strategies for the uncertain future. The conference will wrap up with a producer panel discussing milk pricing and input cost implications. See the entire conference agenda along with registration information at the conference website: <http://igrow.org/events/i29dairyconference/>

Agricultural Risk Management and Outlook

February 1, 2012 has been set for an event focusing on risk management strategies and the agricultural outlook in Sioux Center at the New Life Reformed Church conference center.

Ag Decisions 2012 will feature a keynote address by Jason Henderson, vice president and Omaha Branch executive with the Federal Reserve Bank of Kansas City. Henderson serves as the Bank's regional economist and leads several Bank and Federal Reserve System efforts to track agricultural and rural economies. He also manages the Main Street Economist, a bi-monthly publication covering economic issues affecting rural areas. Jason speaks frequently to a wide range of business, financial and policy audiences across the United States and internationally. His articles on the rural economy have been cited by policy officials, researchers, and various media outlets, including The Wall Street Journal, The New York Times, The Financial Times, and USA Today.

Ag Decisions 2012 will also feature breakout sessions on ag outlook and risk management topics of interest to producers and agribusiness interests. A detailed agenda will be in the next issue of Field & Feedlot.

For more information, contact Sioux County Extension (712-737-4230) or e-mail morourke@iastate.edu.

Dairy Industry: Past, Present, and Future looks at Efficiency and Greenhouse Gas (GHG) / Global Warming Potential (GWP):

Dr. Leo Timms, ISU Extension Dairy Specialist

Last week's global summit of environmental scientists (in Europe) reported a more rapid increase in GHG/GWP than had been predicted for the past few years. Although there was no consensus on what the target "problem threshold is", there were recommendations to reduce GHG/GWP. The dairy industry (like all industries) plays a role in GHG/GWP and has been a leader in addressing this. A look at past, present, and future strategies / accomplishments will continue to make us a leader.

The environmental impact of dairy production: 1944 compared to 2007: Capper et al., 2009. Journal of Animal Science 87:2160.

This modeling study was done using inputs from 1944 and 2007 regarding breed compositions; milk, fat, and protein yields; heifer growth and reproduction; cropland practices; and feeds / diets. Emission of GHG (carbon dioxide CO₂, methane CH₄, and nitrous oxide N₂O) were calculated using Intergovernmental Panel on Climate Change (IPCC) standards and equated to carbon dioxide equivalents (CH₄ = 27X CO₂; N₂O = 300X CO₂). Results are as follows:

	<u>1944</u>	<u>2007</u>
Milk produced (billion kg)	53.1	83.2
Resources or waste / billion kg milk produced		
Lactating cows (x 1000)	414.8	93.6
Total animals (x 1000)	948	202
Maintenance rqt. energy (10 ⁹ MJ)	16.7	3.9
Maintenance rqt. protein (10 ⁶ kg)	165.4	48.4
Feedstuffs as fed (10 ⁹ kg)	8.3	1.9
Land (10 ³ hectares)	1,705	162
Water (10 ⁹ liters)	10.8	3.8
Methane (10 ⁶ kg)	61.8	26.8
Nitrous Oxide (10 ⁴ kg)	41.2	23.0
Carbon footprint GHG (10 ⁸ kg CO ₂)	36.6	13.5

In summary (2007 compared to 1944), we produce 57% more total milk, and to produce an equivalent of milk (kg or lb.) it only takes 22, 35, and 10% of animals, water, and land. In terms of GHG/GWP, that same milk equiv. had 43, 56, and 37% of CH₄, N₂O, and GHG (67% less GHG/ unit of milk). Total GHG was reduced 42% (1123 v 1943 units CO₂) as milk produced increased 57%. Those are numbers our efficient dairy industry should be proud of. Yet, we need to continue future progress.

ISU Research Update: Evaluation of Greenhouse Gas Emissions from Three Dairy Production Systems in Iowa: Conventional (C), Grazing (G), and Combination Conv. /Graz.(CG) MS Thesis – Andrew Herringshaw, Sustainable Agriculture 2010

This research modeled 3 different production systems using herd demographic, production, reproduction and culling data for each individual system using NAHMS 2007 data and the latest Life Cycle Assessment (LCA) GHG methods and calculations. LCA is a method used to compile and assess total environmental impacts and emissions from the entire life cycle of a product or service. Total GHG/ unit energy corrected milk (kg CO₂-eq/ kg ECM) were 1.04, 1.07, and 1.02 for G, CG, and C, respectively. When considering credit for beef and co-products, net emissions were .681, .736, and .742 kg CO₂-eq/ kg ECM, respectively. There were no significant differences between systems but substantial decreases within systems compared to past historic data. Progress yet more!

What's interesting is the breakdown where GHG is contributed in each system and % in each area.

Emissions = kg CO ₂ -eq/ kg ECM	<u>G</u>	<u>CG</u>	<u>C</u>
Total emissions (no allocation)	1.04	1.07	1.02
Enteric fermentation (rumen)	.523	.455	.385
Manure management	.269	.267	.258
Feed production	.159	.253	.281
Energy (IA dairy audit 2008)	.092	.092	.092
Co-product credit (beef/calves)	-.361	-.331	-.275
Net emissions	.681	.736	.742

Emission contribution (%)	<u>G</u>	<u>CG</u>	<u>C</u>
Enteric fermentation (rumen)	50.3	42.5	37.7
Manure management	25.9	25.0	25.3
Feed production	15.3	23.6	27.5
Energy (IA dairy audit 2008)	8.9	8.6	9.0
Co-product credit (beef/calves)	-34.7	-30.9	-27.0

Enteric fermentation (% of forage as diet and rumination- mostly CH₄) is the highest (but necessary) contributor. Much research is focused on reducing this (forage digestibility, enhanced rumen fermentation, feed efficiency). Manure management is 2nd, similar % across groups, but GHG (CH₄ v NO₂), field application, and storage may differ between systems and use different mitigation strategies. Feed production is 3rd and higher in CG and C systems due to fuel use as well increased fertilizer inputs (also an area of research). Co- product credit relates to reproduction and potential excess calves to beef (supports great reproduction efforts in all systems). This shows all systems work / must work together!

Thumbrule Costs to Raise Heifers

"What's a thumbrule cost to raise heifers?" This is an often asked question likely due to the large increase in heifer raising costs since 2007. There is a great risk of taking the "thumbrule" approach on heifer raising costs since management, facilities, labor efficiency and feeding practices can greatly alter the costs on individual farms. However, with the greater use of heifer raising contracts, the desire to know approximate costs is often important. Research literature from Wisconsin in 2007 was used as a starting basis, estimating feed and other costs to come up with a "thumbrule" table.

For unweaned, "wet" calves, a thumbrule of \$5.75 was used but realize this value varies widely from farm to farm depending heavily on facilities, labor efficiency, milk feeding programs, etc.

In Table 1, the "other costs" category includes bedding, utilities, fuel, veterinary and medicine, paid and unpaid labor, interest and death loss. Those costs hover around the \$1 per head per day mark, with a range of up to \$0.20 per head per day lower under 600 pounds and up to \$0.20 per head per day higher over 1,000 pounds. So, on average, \$1 per head per day is a good estimation.

Feed costs beginning at 4 months or around 300 pounds has a 10 cent slide for each additional 100 lbs up to 600 pounds. From 700 pounds to 1,200 pounds, a 20 cent upward slide is used for each additional 100 pounds of body weight.

Table 1.

Daily Cost "Thumbrules" with 2011 Approximated Costs						
Weight lbs.	Age months	Feed Costs	Breeding Costs	Other Costs	Total Costs	Total without Breeding Costs
100+	1-2	-----	-----	-----	\$5.75	\$5.75
200	3	\$1.00	-----	\$1.00	\$2.10	\$2.10
300	4	\$0.90	-----	\$1.00	\$1.90	\$1.90
400	6	\$1.00	-----	\$1.00	\$2.00	\$2.00
500	8	\$1.10	-----	\$1.00	\$2.10	\$2.10
600	10	\$1.20	-----	\$1.00	\$2.20	\$2.20
700	12	\$1.40	\$0.05	\$1.00	\$2.45	\$2.40
800	14	\$1.60	\$0.30	\$1.00	\$2.90	\$2.60
900	16	\$1.80	\$0.20	\$1.00	\$3.00	\$2.80
1000	18	\$2.00	\$0.20	\$1.00	\$3.20	\$3.00
1100	20	\$2.20	\$0.05	\$1.00	\$3.25	\$3.20
1200	22	\$2.40	-----	\$1.00	\$3.40	\$3.40

Thumbrule Costs without Breeding

Breeding costs incur mostly between the 800 and 1,000 pound time frame depending upon breed but begin around 700 and might continue up to 1,100 pounds. The far right of Table 1 lists total costs except for breeding costs as a convenience for those who raise heifers for others but are not responsible for the breeding costs. This also gives some "easy to remember" approximate slide rules.



Beginning around 300 pounds at a cost of \$1.90 per head per day, there is a 10 cent slide upwards for each additional 100 pounds of body weight until 600 pounds and then a 20 cent slide upward for each additional 100 pounds of body weight above 600 pounds.

Again, these costs include feed, bedding, utilities, fuel veterinary and medicine, paid and unpaid labor, interest and death loss.

Summary

Trying to provide "thumbrule" costs on raising heifers is risky due to variables in management, feed costs, facilities and labor. Tables 1 and 2 are attempts to give "ballpark figures" on heifer raising costs. Thus, **please use them only as "rough" estimates as many of the costs can vary 20% or more either way** on individual farms.

Heifer raisers are encouraged to look at their own costs of production when working through heifer raising contracts. ISU Extension has a dairy budget that includes the heifer enterprise that can be utilized for your particular operation.

by Larry Tranel, ISU Extension Dairy Specialist, NE/SE Iowa

