



**Larry Tranel**



**Jenn Bentley**



**Kevin Lager**

## Low Cost Parlor and Robotic Milking

Thanks to all who participated in our Low Cost Parlor and Robotic Milking Tours this past summer. On both fronts, things continue to get more interesting as we continue to learn more and publish more on them. Attendance was estimated at over 450 for all the tours combined.

On the low cost parlor side, a new standard of milking time is being reached with around 70 cows per person per hour with set-up and clean-up for about half the previous cost of milking in a stall barn or out-dated parlor. As we continue to learn about the variables at play with robotic milking system, we are learning that their cost could be below \$2 per cwt with payback periods in the 6 year range. Some estimates are about the same costs as milking in a stall barn believe it or not. Check out the article on page two highlighting our Low Cost Parlor and Robotic Milking System workshops being planned.

## Feed Prices and Financial Planning

The effects of the drought continue to linger on due to feed prices and lower feed supplies in storage for most. Please keep us in mind if in need of a profit analysis for your dairy this winter. For feed prices, check out the FEEDVAL worksheet inside for feeds that might be considered "better buys" currently.

## Dairy Days and Other Meetings

Check inside for a listing of meetings by ISU Extension and Outreach Dairy Team and we hope to see you around during the winter meeting season.

Sincerely,

**Kevin Lager**

ISU Extension Dairy Field Specialist, NW Iowa

**Jenn Bentley and Larry Tranel**

ISU Extension Dairy Field Specialists, NE and SE Iowa

Newsletter edited by: Larry Tranel

## **New publication from ISU Extension helps dairy producers recognize and manage manure impacts on water quality**

*Angela Rieck-Hinz and Shawn Shouse, Iowa State University Extension and Outreach*

Iowa State University Extension and Outreach has developed a new handbook "Small Open Lot Dairies in Iowa- a producer guide". In this handbook, the term 'small open lot dairy' will be defined dairy operations that confine less than 1,000 head of immature dairy; or less than 700 head of mature dairy in an open feedlot or pen situation.

The purpose of this handbook is to small open lot dairy operators understand:

- how runoff from dairies can impact water quality in Iowa,
- how state and federal regulations apply to dairies in Iowa,
- how operators can assess the environmental impacts of their dairies,
- control and containment solutions that can help better manage manure and runoff,
- management practices that can help better manage manure and runoff, and
- resources for technical assistance.

The handbook is available to order from the Extension On-line Store at <https://store.extension.iastate.edu/> by typing "PM 3019" in the search box or by calling 515-294-5247. You may download the publication as well as access other resources from the Small Feedlots and Dairy Operations web page at ISU at <http://www.agronext.iastate.edu/immag/smallfeedlotsdairy.html>.

*The publication was developed as part of the Water Quality Initiative for Small Iowa Beef and Dairy Feedlot Operations. This initiative is supported by the Iowa State Dairy Association, Iowa Department of Natural Resources, Iowa Cattlemen's Association, Iowa Department of Ag and Land Stewardship, USDA-NRCS, and Iowa State University Extension and Outreach, and is supported in part by a section 319 grant from the IDNR and U.S. Environmental Protection Agency, Region 7.*

**ISU Extension Dairy Team**  
**"Bringing Profits to Life"**

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

**Inside This Issue:****Winter Informational Meetings/Dairy Days****Drought Related / Aflatoxin Issues****Dairy Finances / Budgets for 2013****Improving Dairy Energy Efficiency****Iowa Dairy Industry and Survey 2012****ISU Research Update: Genetic Parameters****Looking for the Best Deals on Feed?**

## Workshop Series: Low Cost Parlors and Robotic Milking Systems

Many Iowa producers are only achieving 22-35 cows per person per hour in milking labor efficiency. Low cost parlors are allowing producers to double milking labor efficiency while achieving a safer, more pleasant and ergonomically correct way to milk cows. And, even robots can be pretty cost competitive economically to producers milking in stall barns or old outdated parlors.

Producers who are considering a change in milking systems should take advantage of the informational meetings below as Larry Tranel and Jenn Bentley, Extension Dairy Specialists will discuss financial and cash flow impacts of Automatic Milking Systems (Robots) and Low Cost Parlor systems along with production and management concerns. Meeting locations and times are as follows:

### Tues. Dec 3<sup>rd</sup> – Postville YMCA, Community Center

10 am-Noon Automatic Milking Systems  
1pm-3 pm Low Cost Parlor Systems

### Thurs. Dec 6<sup>th</sup>-Holy Cross. Neuman's Bar and Grill

10 am-Noon Automatic Milking Systems  
1pm-3pm Low Cost Parlor Systems.

### Fri. Dec 7<sup>th</sup>-Oelwein Public Library

10 am-Noon Automatic Milking Systems  
1pm-3pm Low Cost Parlor Systems.

### Wed. Dec 12<sup>th</sup> – ISU Extension Office, Bloomfield

10 AM-Noon Low Cost Parlor Systems  
1pm-2:30 pm **Farm Tour:** Jonathan Mast Farm,  
14936 225<sup>th</sup> Street, Bloomfield, Iowa 52537-7226

### Thurs. Dec 13<sup>th</sup>-Freedom Security Bank, Kalona

10 AM-Noon Low Cost parlor Systems  
1pm-2:30 pm **Farm Tour:** Leslie Miller Farm,  
2851 560<sup>th</sup> ST. SW, Kalona, Iowa 52247-9202

The informational meetings are sponsored by Iowa State University Extension and Outreach and the North Central Risk Management Education Center. Contact Jenn Bentley at [jbentley@iastate.edu](mailto:jbentley@iastate.edu), 563-382-2949 or Larry Tranel at [tranel@iastate.edu](mailto:tranel@iastate.edu), 563-583-6496.



*Pictured on left is Dr. Leo Timms speaking at a Milk Quality Barn Meeting.*

## Join us for NE Iowa Dairy Days 2012

This year's agenda for topics and speakers are:

- 1) **Feed Budgeting and Feed Values**  
by Lee Kilmer
- 2) **The New Iowa Dairy Budget**  
by Kristen Schulte
- 3) **Low Cost Parlor and Automatic Milking Systems Producer Surveys**  
by Jenn Bentley or Larry Tranel
- 4) **2012 Iowa Dairy Survey Results**  
by Leo Timms
- 5) **Effluent Pumping, Milkhouse Waste & Nutrient Management**  
by Dan Huyser or Greg Brenneman
- 6) **Fungicides & Forage**  
By Brian Lang or Mark Carlton

Dairy Days will take place from 10am-3pm on the following dates and locations:

**Jan 21** Riceville, St. Peter's Lutheran Church  
105 W. 6th St.

**Jan 22** Calmar, NE Iowa Dairy Foundation  
Hwy 150 South

**Jan 23** Waverly, Civic Center  
200 1st Street NE

**Feb 6** Holy Cross, Neumann's Bar and Grill  
927 Main St.

**Feb 7** Ryan, American Legion Hall  
210 Main St.

**Feb 12** Kalona—Chamber of Commerce Building  
514 B. Ave

**Feb 13** Bloomfield, Davis County Extension Office  
402 East North St.

**Cost for Dairy Days is \$15 and includes lunch. Vouchers available from select area businesses.**

## Stay Tuned for Meetings in NW Iowa



Some of the Low Cost Parlor and Automatic Milking System meetings are being considered for NW Iowa as Kevin Lager gets situated in NW Iowa. Please stay connected to media announcements this winter.

## Manage Drought-Related Feed Issues

by Lee H. Kilmer, ISU Extension and Outreach Dairy Specialist

The drought that affected much of the central US this past summer has presented some dairy producers with a huge challenge as forage supplies are tight and expensive, and traditional feedstuffs such as corn and soybean meal prices are at or near record highs. Consequently, the biggest question facing producers is how to deal with these challenges.

The first step is to take an inventory of available feed on hand and estimate needs based on current or anticipated animal numbers. If forage supplies are tight, you may want to consider planting winter rye or triticale for early spring harvest.

Second, if forage supplies are tight, you may be able to stretch your forages by feeding a minimum forage diet and supplementing with by-product fiber sources such as whole cottonseed or by feeding a limited amount of straw. Also target feed refusals at 1% or less.

If you will need to buy corn and don't like paying \$8 a bushel, other cereal grains, such as wheat, barley, rye or oats may provide some price relief, but prices of all cereal grains tend to track together. Other alternatives to corn include beet pulp, citrus pulp, hominy, molasses, soybean hulls, candy, and corn bran or corn syrup.

With soybeans around \$16 a bushel, alternative protein sources would include brewers grains (50:50), distillers (50:50), corn gluten feed (60:40), whole cottonseed (60:40), malt sprouts (70:30), wheat midds (70:30), and whole sunflowers (70:30). The numbers in parentheses represent the amount of corn and soybean meal that can be replaced by the alternative feed.

Our colleagues at the University of Wisconsin Madison have updated the popular FeedVal program (FeedVal 2012) that provides estimates of which feeds represent a "good" feed buy and which do not. It is available at [www.uwex.edu/ces/dairynutrition/](http://www.uwex.edu/ces/dairynutrition/). Check our last page of this newsletter for a current printout.

Currently (October 2012), if you are in a situation where you need to buy feedstuffs, several by-products (distillers, soy hulls, corn gluten feed and brewers grains) are better feed buys (based on cost per unit of nutrient) than either shelled corn, soybean meal or whole cottonseed. Dr. Randy Shaver has a good article on By-Product Feedstuffs (available at [www.uwex.edu/ces/dairynutrition/pubs.cfm](http://www.uwex.edu/ces/dairynutrition/pubs.cfm))

Other sources of price information include Feedstuffs magazine ([www.feedstuffs.com](http://www.feedstuffs.com)) and the University of Missouri By-product Feed Price Listing ([agebb.missouri.edu/dairy/byprod/bplist.asp](http://agebb.missouri.edu/dairy/byprod/bplist.asp)).

## Aflatoxin Still a Cautious Concern

by Jenn Bentley, Dairy Field Specialist, NE Iowa

Aflatoxins are mycotoxins of major concern to the dairy industry. Most mycotoxins are found in grain, usually grown in drought. Most frequently, aflatoxins are found in corn, corn silage, cottonseed, and/or corn by-product feeds. Corn distiller's grain will be three times higher than the original corn in aflatoxin.

Because aflatoxins are carcinogenic to animals and possibly humans, they are monitored closely in the food supply. When aflatoxin is found in milk at concentrations of 0.5 parts per billion (ppb) or greater, the milk is discarded because it can't be consumed for human consumption. Cows that consume feed containing 20 ppb aflatoxins or greater may produce milk that exceeds the tolerance level. It usually takes the cow 2-3 days on aflatoxin-free feed for milk concentrations to fall below tolerance levels. This is highly dependent on the concentrations of aflatoxins in the feed (and milk) as well as the diet being fed to the cow.

If milk is found to be high in aflatoxin, it is critical that records be maintained of all feeds, feeding practices, milk quantities, contamination levels, as well as animal health and performance. All grain products should be removed and tested, and replaced with new grain or related feeds in the diet that contain less than 20 ppb aflatoxin. Have your milk coop monitor your milk weekly to be sure it's safe.

Strategies to deal with aflatoxin contaminated corn grain or silage include diluting down the grain with wholesome forages and grains. Clay-based compounds such as bentonite and a yeast cell wall extract (known as MOS and glucomannans) can be added to the diet at recommended levels.

Good management practices will help reduce the problem of mycotoxins in dairy rations:

1. Be very cautious in the purchasing of corn during drought conditions.
2. Store grains at moisture levels less than 14%.
3. Clean up around the feed mill and feed troughs to avoid damp areas suitable to mold growth. Clean equipment after harvest to avoid contamination.
4. Particular caution should be applied to corn and corn silage storage, since these feeds can make up a large portion of the diet and storage structures will have as much variation in contamination as the fields from which they were harvested. Screen out fines and broken kernels as these are more susceptible to mold growth.

There are simple, fast, semi-quantitative tests which can be performed to test for aflatoxin. Kits using ELISA technology are available to test on the farm as well as commercially. The antibody is also attached to a molecule that glows (fluoresces); if fluorescence is read optically, then a quantitative (actual ppb) value can be determined. If the color change is just visual at a certain level, then a qualitative (yes or no) value above the preset threshold of the kit is determined. A list of off-site labs for testing in Iowa can be found at [www.extension.iastate.edu/Grain/](http://www.extension.iastate.edu/Grain/). USDA-GIPSA grading agencies, as well as several private labs and the ISU Vet Diagnostic Lab, can do toxin testing on submitted samples.

## **Dairy Operations and Financial Considerations for 2012-2013**

*by Kristen Schulte, Farm and Agri-Business Management Specialist, NE Iowa*

Dairy producers may undergo additional financial strain in the coming year due to higher input costs. However, proper financial planning and communication now can relieve the stress in coming months.

With high feed commodity prices and a potential need to purchase additional feed, completing a cash flow statement may be beneficial for dairy producers. This statement can help producers project the level of cash flow in and out of the business over a period of time. Additionally, it can estimate the level of cash reserves, available capital or an operating loan, that will need to be accessed in times of negative cash flow. A cash flow for a dairy operation can be done on a monthly basis due to the operation generating constant revenue and expenses.

When completing a cash flow, accurate estimates of projected revenue and expenses are important to create useful estimates. Depending on how milk prices settle in 2013, producers may need to evaluate sources of revenue and expenses and components of feed rations. Strong cull cow market prices may influence additional revenue from sale of livestock. Producers should closely evaluate the productivity and efficiency of cows in their herd if feed inventories are tight, herd levels and expansion goals are maintained and strong cull cow prices hold.

Additionally, raising excess heifers than needed to maintain a herd size is common among dairy operations, this is an additional expense than gain due to the cost of raising a heifer likely exceeding the market price of a springer heifer. Excess young heifers can be sold as an additional source of revenue. Due to the dry growing conditions this year, it is important to have an accurate feed inventory assessment.

Short inventories may require producers to purchase more forages over the next year than normal which will

impact the cash flow. Additionally, with a dairy operation over 95 percent of revenue comes from milk sales; production may vary based on weather, feed, or reproduction (calving cycle or conception rate over the summer months). Close evaluation of all inputs per month is important to get an accurate picture of the financial cash position the dairy operation may undergo in the next year.

An operation should consistently evaluate their financial position based on selected financial ratios. Due to the current conditions, a few measures that should be watched in the coming year are working capital and repayment capacity. Working capital is calculated as the difference between current assets and current liabilities; this measure is typically measured against gross revenue as a ratio measure. Working capital is the financial 'cushion' a farm has available to pay immediate expenses and the amount needed depends on the operation. A ratio measure, of over 25% is of good standing for an operation with a steady stream of revenue; operations with seasonal income, grain operations, should strive for a measure closer to 50%. Due to higher input costs, and this measure may undergo strain in the coming months.

Repayment capacity is the borrower's ability to repay debt on time and replace capital assets over a year's time. The two calculations used to measure repayment capacity are "term debt and lease coverage ratio" and "capital replacement and term debt repayment margin". A ratio of over one is desired as it ensures the net revenue is greater than the level of term debt and lease payments. The repayment margin measures the amount of net revenue left after term debt payments and annual capital replacement expenses are paid. Stress in either of these areas may require additional communication and planning with a lender to meet repayment requirements.

Comprehensive financial analysis is important for operations to routinely undergo, but liquidity and repayment capacity are two areas which may see strain due to projected tightened profit margins in the coming year for dairy operations. Based on the financial position of an operation over the coming year, additional evaluation of management practices and individual enterprises along with reviewing or creating a marketing plan may be required.

If an operation is projected to undergo stress, proper planning and communication now with the lenders and those directly involved with the business is important to help the operation survive any foreseen financial hurdles. When evaluating your dairy operation, be sure to make decisions based on sound reasoning and data; refrain from getting caught in a stressful, emotional time when making changes. When handling stressful situations, whether it is personal, financial, or business related, the Iowa Concern Hotline, 1-800-447-1985, is a resource for Iowan's to receive help and guidance for their given situation.

## Improving Dairy Energy Efficiency

by Dan Huyser, ISU Extension Ag Engineer, NE Iowa

Modern dairies depend on various energy sources to accomplish the day to day tasks of producing and handling wholesome milk. With the completion of field work, now is a good time to look into maximizing energy efficiency on the farm and saving some money.

Having your utility company come to your operation and do an energy assessment is a great way to start. They will make recommendations and offer tips that can contribute to considerable savings. Many times, they offer rebates to help offset the costs of efficiency upgrades.

Checking furnaces and heaters before they are put to heavy use can improve performance, reduce break downs, and insure safety. Furnace filters should be checked and changed if needed. Accessible heater burners can be cleaned to insure consistent and complete burning of the fuel. A qualified service person should periodically check heat exchangers for cracks or holes, especially on older units. Making sure that heater fans and their motors are clean along with lubricating serviceable fan bearings will keep the efficiency up and the problems down. Thermostats in dusty areas will also benefit from a little attention. Blowing out accumulated dust will help maintain their accuracy and functionality.

Upgrades in the milking center will quickly save money. "Energy Efficiency for Dairy Milking Equipment" is a publication available through the Iowa State Extension Store (<https://store.extension.iastate.edu/>) that discusses the benefits of switching to Refrigeration Heat Recovery (RHR) units, plate coolers, and scroll compressors on milk cooling systems. Energy savings of 15-20% can be expected in these improvements. A new variable frequency drive on your vacuum pump can net 50-60% energy savings over older systems.

There are other ways to improve energy efficiency in the milking center. Checking the belts on the vacuum pump for wear and correct tension will reduce belt slippage and performance. Keeping the fins clean on the condenser of the cooling unit will improve airflow and heat exchange which in turn will make the cooling system run less. Also important here is to check any screens or ducts for air used by the cooling system for dirt or debris that would inhibit air flow and increase run time.

There are more areas that can reduce energy usage. For tips on saving energy and information on water

heating, insulating, and more topics, go to <http://www.iowaenergycenter.org>.

Another source for energy improvement ideas is your local Natural Resource Conservation Service (NRCS) office or go to <http://www.ia.nrcs.usda.gov/programs/EnergyInitiative.html>. Their EQIP On-Farm Energy Initiative enables a producer to identify ways to conserve energy on the farm and provides technical and sometimes financial assistance to implement measures and practices recommended in an on-farm energy audit. With a little work and assistance from available resources, saving energy and money is very easy to do.

## **ON THE HORIZON--DAIRY IOWA PROFITABILITY TEAM**

This fall, several ISU Dairy Extension Specialists will be conducting a pilot trial program for selected dairy producers as the Dairy Iowa Profitability Team project. This involves working with a dairy producer and their chosen farm suppliers to work collaboratively to solve specific herd challenges. These could include improving reproductive efficiency, milk quality issues, improving calf survival and growth, or guidance about herd expansion. The team is chosen by the producer, with the common goal of combining their herd knowledge and experience, with the shared goal of improving the herd owners' profitability. Thus everyone wins.



By meeting together with the farm owner and key farm staff and reviewing the owner's production records and

concerns, they decide on which area to improve and then collectively find methods to accomplish their goals. Team members could include their veterinarian, nutrition consultant, breeding and genetics rep, dairy equipment suppliers, etc. Meeting together focuses everyone on problem solving issues.

After these trial herds and determining eligible time requirements, we will examine extension's role in making the program available to more interested dairy producers. If your dairy would like to be one of the trial herds, contact Larry Tranel or Jenn Bentley.

## ISU Dairy Research Update:

### Genetic parameters for energy balance, feed efficiency, and related traits in Holstein cattle

by Dr. Diane Spurlock, ISU Dairy Molecular Geneticist

Long term selection for increased milk production coupled with improved management practices has dramatically increased milk production and component yields over the past decades. However, as production increases, producers must be cognizant of fitness traits including energy balance in early lactation where animals utilize body reserves to supplement nutrition needs until dry matter intake (DMI) maximizes.

Also, the dairy (and other) industries face increasing pressures to improve production efficiencies, primarily due to the need to maintain profitability in an era of increasing feed costs, and desire to improve environmental stewardship.

The objective of our ISU research is to discover new tools and strategies that will allow selection for more efficient production (optimize milk and component income while optimizing feed efficiency and cost).

The specific objective of this ISU research study was to estimate genetic parameters for energy balance (EB), gross feed efficiency (GFE), DMI, body weight (BW) and body condition score (BCS) as they relate to production efficiency.

Data was collected on 402 Holstein cows from 30 days pre-partum through 150 days post partum. Data included individual animal daily milk production and DMI, weekly milk composition, weekly BW and BCS, weekly TMR and orts analyses, and monthly DHIA information. Cows descended from 93 sires and 321 dams, and 83 daughter-dam pairs were included in data set. A 5 generation pedigree was used and included 2,414 individuals.

### Summary highlights and future research directions:

- DMI and EB are traits that will likely respond to selection pressure using future identified molecular markers.
- EB genetic regulation different between early –mid lactation.
- Unfavorable genetic correlation between EB and GFE in early lactation (more feed efficient, more milk, decreased EB)
- Correlation between EB and GFE improved from 75-150 DIM

- Improvement in efficiency, w/out unfavorable EB in early lactation may be achievable through future selection.
- Other current research has elucidated mechanisms on how animals utilize body energy stores to support lactation.
- Currently coupling ISU data with Scotland data (450 cows) to improve genetic estimates
- Current ISU research is international study evaluating feed efficiency / EB in 8000 dairy animals ( IA / MI / FLA / WI / Netherlands)
- The Future: Increased efficiency (production, feed intake, nutrient utilization simultaneously) using genetic selection and molecular markers.

## Master Hoof Care Program in Calmar

The Master Hoof Care Program is a hands-on training program for instruction in hoof care and trimming. Trimming techniques are designed to correct claw horn overgrowth without over-trimming, balance weight bearing within and between the claws of each foot, and finally, create a stable weight bearing surface on all claws. The workshop is a half day of lecture and the remainder is lab/live cows. The lab will consist of instruction on knife sharpening techniques, the treatment of lameness disorders including the proper application of foot blocks for relief of weight bearing in diseased or injured claws and practice trimming with knives and grinders. **Registration deadline is February 1st.**

**Please read:** There will be a \$95/person charge at the first day of class for educational materials that each student will get to take home. Materials include the manual, DVD, gauge, and a set of left and right knives. Lunch is provided each day. Tuition: \$449.00. Instructor: [Shearer, DVM](#)

Friday, Saturday 8:30 am - 5:00 pm; 2 sessions starting February 15, 2013, ending February 16, 2013, [Iowa's Dairy Center](#), Rm. 115

### Master Hoof Care Program-Lecture Portion Only

Registration deadline is February 8th. Lunch is provided. Friday, 8:30 am - 12:30 pm; 1 session starting February 15, 2013, ending February 15, 2013. Tuition: \$39.00

## Dairy Days Coming to NW Iowa

Save the dates for Dairy Days coming to NW Iowa on Feb 19<sup>th</sup> in Orange City and on Feb 20<sup>th</sup> in Cherokee. Locations, speaker and topics have yet to be determined as Kevin Lager, our new dairy field specialist in NW Iowa gets a chance to meet producers and determines needs to address at the meeting.

# Planning for the Future with Enterprise

**Analysis** by Kristen Schulte, Farm and Agri-Business Management Specialist, ISU Extension, NE Iowa

As the harvest comes to a close, planning for next year will begin with deciding desired crop mixes. Livestock producers will continue to determine profitability potential in the coming months based on feed inventory or availability and production output. Proper economic, financial, and production (agronomic or efficiency) analysis is required to ensure long term profitability of an operation. Closely analyzing the different activities in the business can be critical to determining the success of the whole business.

Many businesses, especially farming operations, are comprised of several enterprises, that is, more than one commodity contributes to net revenue. These enterprises may compete, complement, or supplement one another depending on the associated requirements of inputs such as capital, facilities, feed, land, or labor.

Enterprise analysis helps to allocate the limited resources of land, labor, and capital of an operation to specific enterprises to determine its profitability and contribution to the whole operation. Additionally, based on the contribution to whole farm profit and use of input resources, one can evaluate the proper enterprise mix for the operation. Enterprise analysis can also help to determine the desired selling price of a commodity or evaluate production practices and associated cost of production.

For example, if a farm has a 200 cow dairy, what is the appropriate crop mix and number of required acres to complement the dairy operation? This decision may be based on feed requirements or providing adequate returns to the whole farm within restrictions of available labor and machinery. The appropriate mix may be based on capital and labor available. For example, forage crops require more labor hours annually than a corn enterprise; the availability and timing of labor and machinery may define the types of crops and associated acres chosen.

Another example is a producer raising specialty crops. Fruit or vegetable crops take a varying amount of labor, capital, and land. Some vegetable and fruit crops can generate positive returns on a relatively small amount of acreage compared to conventional crops; however, these enterprises may in turn have higher labor or capital investment requirements. Therefore, if a producer has a small land base and ample labor availability, a specialty crop acre mix to effectively utilize labor and capital to generate returns can be determined from enterprise analysis.

Dairy budgets for different management types and at various production levels are available through ISU Extension dairy specialists. Additional enterprise budgets are available on Ag Decision Maker,

[www.extension.iastate.edu/agdm](http://www.extension.iastate.edu/agdm) . Crop budgets include conventional and organic corn, soybeans, oats, and forage; pasture; and fruit and vegetable production. Livestock budgets are available for swine and beef production at various production stages.

In each ISU Extension budget a breakeven price for the commodity produced is calculated. When comparing between enterprises, only variable costs, such as machinery fuel and repair costs, need to be included. Fixed costs do not need to be considered, because they will remain the same regardless of which enterprises are selected. However, fixed costs, such as cost for land or buildings, should be included when evaluating an enterprise to determine breakeven cost of production.

Enterprise budgets also include receipts from the enterprise. Be sure to include all sources of revenue, including manure for a livestock enterprise or corn stalk bales for a corn enterprise. Subtracting variable costs from expected revenue calculates a net return over variable costs per acre or hour for each enterprise, which can be used as criteria for choosing among them for an adequate mix on a whole farm basis.

When evaluating enterprises, one should note that a snapshot of one production year may not be typical. Due to unusual growing conditions or crop rotations, one year may not be representative of the profitability of that enterprise. Therefore an average of returns and inputs over time or a projection of long-term returns based on crop rotations may more accurately reflect potential profitability.

Enterprise budgets for crops and livestock are available online; however, individual farm factors such as availability to input suppliers and markets may affect costs and returns, so each farm should adjust the inputs to represent their own situation. ISU budgets can act as a benchmark for average enterprises in Iowa or a starting place to make adjustments for analysis.

## Iowa Dairy Budgets for 2013

On the following two pages are the projected dairy budgets for Iowa for this winter. One is projected for 24,000 pounds of milk per cow annually for a confinement operation, the other is for 18,000 pounds of milk per cow annually for a grazing operation. Realize this dairy budget is “buying feed” from your own crop enterprises or elsewhere and that average facility costs are included as well.

On the far right of each budget is a stand-alone heifer budget that is also included in the dairy cow budget. As you well know, the cost of raising heifers is not cheap.

If you have questions on these dairy budgets or would like to run the budgets for your own operation, please call or email Larry Tranel, Jenn Bentley or Kristen Schulte in NE/SE Iowa or Kevin Lager in NW Iowa.

# Iowa Dairy Budget, Conventional System Producing 24,000 pounds per cow

ISU Extension DAIRY BUDGET				Conventional Based System		Projected		HERD DATA INPUT	
For: Average Production Cows in Conventional System						Total Herd		Milk/Cow	24,000 lbs
Income	Price	Unit	Amount	Cwt Eq.	1 Cow	Cows Only	w/Heifers	No. Cows	120
Milk Sales	\$21.50	cwt.	240.00	240.00	\$5,160	\$619,200	\$619,200	Lbs/Cow	1,350 lbs
Bull Calves	\$125	head	0.45	2.62	\$56	\$6,750	\$6,750	Cull Rate	37%
Cull Cows (less death loss)	\$600	head	0.32	8.93	\$192	\$23,040	\$23,040	1st Calving	24 months
Manure	\$3.00	ton	21.00	2.93	\$63	\$7,560	\$7,560	No. Heifers Needed	91.5
Heifer Sales	\$300	head	0.46	6.42	\$138	\$16,560	\$3,600	<b>Heifer Raising Budget</b>	
<b>Expenses</b>			<b>Totals</b>	<b>260.90</b>	<b>\$5,609</b>	<b>\$673,110</b>	<b>\$660,150</b>	<b>1 Heifer</b>	<b>for 24 months</b>
Feed Costs (DM = Dry Matter) Feed Wastage			10%					Feed Costs	
Hay/Haylage - DM	\$294.12	ton	5.15	\$6.39	\$1,666	\$199,941	\$252,232	\$1,110	3.75 ton
Pasture Forage - DM	\$120.00	ton	0.00	\$0.00	\$0	\$0	\$6,218	\$132.00	1.00 ton
Corn Silage - DM	\$224.24	ton	2.65	\$2.51	\$654	\$78,440	\$87,154	\$185.00	0.75 ton
Corn Equivalent - US No. 2	\$7.40	bu	106.0	\$3.31	\$863	\$103,541	\$113,510	\$211.64	26.00 bu.
By Product Feed	\$0.15	lb.	1350.0	\$0.85	\$223	\$26,730	\$26,730		
Protein Supplement	\$0.28	lb.	1875.0	\$2.21	\$578	\$69,300	\$79,746	\$221.76	720.00 lb.
Salt and Minerals	\$0.14	lb.	336.0	\$0.20	\$52	\$6,209	\$6,572	\$7.70	50.00 lb.
Fat Supplement	\$0.54	lb.	105.0	\$0.24	\$62	\$7,484	\$7,568	\$1.78	3.00 lb.
Milk Replacer/Calf Feed	\$0.00	lb.	0.0	\$0.00	\$0	\$0	\$0	\$0.00	200.00 lb.
<b>Total Feed Costs =</b>				<b>\$15.70</b>	<b>\$4,097</b>	<b>\$491,646</b>	<b>\$579,730</b>	<b>\$1,870</b>	<b>7.21 ton/hd</b>
Livestock Costs								Livestock Costs	
Dairy Supplies	\$180.00	head	1.00	\$0.69	\$180	\$21,600	\$22,071	\$10.00	head
Freight/Trucking/Hauling	\$0.15	cwt	240.00	\$0.14	\$36	\$4,320	\$4,556	\$5.00	head
Veterinary & Medicine	\$0.65	cwt.	240.00	\$0.60	\$156	\$18,720	\$20,604	\$40.00	head
Breeding Fees	\$8.48	head	1.00	\$0.03	\$8	\$1,018	\$2,666	\$35.00	head
DHIA/Accounting/Legal	\$29.00	head	1.00	\$0.11	\$29	\$3,480	\$3,621	\$3.00	head
Marketing	\$0.30	cwt	240.00	\$0.28	\$72	\$8,640	\$8,687	\$1.00	head
Bedding Costs	\$90.00	ton	1.00	\$0.34	\$90	\$10,800	\$12,920	\$45.00	0.5 ton
Gas/Fuel/Oil	\$3.80	gal.	15.00	\$0.22	\$57	\$6,840	\$8,451	\$34.20	9 gal.
Electricity	\$0.10	kWh	621.00	\$0.24	\$62	\$7,452	\$8,276	\$17.50	175 kWh
Other (oper. int., phone)	\$90.00	head	1.00	\$0.34	\$90	\$10,800	\$11,271	\$10.00	head
Facilities & Equipment Cost: Use a % of value for Depreciation, Interest, Repairs, Taxes & Insurance								Facilities & Equip Costs	
Milking Center/Parlor	\$800	head	12.0%	\$0.37	\$96	\$11,520	\$11,520		
Dairy Housing	\$2,000	head	10.0%	\$0.77	\$200	\$24,000	\$24,000		Cost/Head/Day
Manure Storage/Handling	\$600	head	10.0%	\$0.23	\$60	\$7,200	\$9,574	\$50.40	\$0.07 head
Heifer Housing							\$8,818	\$187.20	\$0.26 head
Machinery and Equipment	\$1,500	head	18.0%	\$1.03	\$270	\$32,400	\$33,078	\$14.40	\$0.02 head
<b>Investment Per Cow =</b>			<b>\$4,900</b>						
Use a % of value for Interest and Insurance									
Cow Ownership Costs	\$1,600	cow	5.50%	\$0.34	\$88	\$10,560	\$13,201	\$115.50	Ownrshp Cost/hd
Heifer Replacement Costs	\$1,350	/heifer		\$1.91	\$500	\$59,940		\$300.00	Initial Value
Labor and Mgt Costs	\$12.00	hour	42	\$1.93	\$504	\$60,480	\$72,915	\$264.00	22.00 hrs/hd
<b>Total Expenses:</b>				<b>\$25.28</b>	<b>\$6,595</b>	<b>\$791,415</b>	<b>\$932,830</b>	<b>\$3,002 Total</b>	<b>\$4.11</b>
<b>Net Returns after all Cost including Labor &amp; Assets:</b>				<b>-\$3.78</b>	<b>-\$986</b>	<b>-\$118,305</b>	<b>-\$118,112</b>	<b>\$3,002 Adjusted</b>	<b>/day</b>

## Iowa Dairy Budget, Pasture System Producing 18,000 pounds per cow

ISU Extension DAIRY BUDGET				Pasture Based System		Projected		HERD DATA INPUT		
For: Holstein/Holstein Cross Breed Cows on Pasture						Total Herd		Milk/Cow	18,000 lbs	
Income		Price	Unit	Amount	Cwt Eq.	1 Cow	Cows Only	w/Heifers	No. Cows	120
Milk Sales		\$21.50	cwt.	180.00	180.00	\$3,870	\$464,400	\$464,400	Lbs/Cow	1,200 lbs
Bull Calves		\$125	head	0.45	2.62	\$56	\$6,750	\$6,750	Cull Rate	27%
Cull Cows (less death loss)		\$600	head	0.22	6.14	\$132	\$15,840	\$15,840	1st Calving	24 months
Manure		\$3.00	ton	20.00	2.79	\$60	\$7,200	\$7,200	No. Heifers Needed	66.7
Heifer Sales		\$250	head	0.46	5.35	\$115	\$13,800	\$6,000	<b>Heifer Raising Budget</b>	
Expenses				Totals	196.90	\$4,233	\$507,990	\$500,190	1 Heifer	for 24 months
Feed Costs (DM = Dry Matter) Feed Wastage				10%					Feed Costs	
Hay/Haylage - DM		\$294.12	ton	2.25	\$3.70	\$728	\$87,353	\$112,792	\$740.07	2.50 ton
Pasture Forage - DM		\$120.00	ton	2.25	\$1.51	\$297	\$35,640	\$42,446	\$198.00	1.50 ton
Corn Silage - DM		\$224.24	ton	2.25	\$2.82	\$555	\$66,600	\$75,079	\$246.67	1.00 ton
Corn Equivalent - US No. 2		\$7.40	bu	60.0	\$2.48	\$488	\$58,608	\$65,883	\$211.64	26.00 bu.
By Product Feed		\$0.15	lb.	1500.0	\$1.26	\$248	\$29,700	\$29,700		
Protein Supplement		\$0.28	lb.	0.0	\$0.00	\$0	\$0	\$5,293	\$154.00	500.00 lb.
Salt and Minerals		\$0.14	lb.	261.0	\$0.20	\$40	\$4,823	\$5,088	\$7.70	50.00 lb.
Fat Supplement		\$0.54	lb.	0.0	\$0.00	\$0	\$0	\$0	\$0.00	0.00 lb.
Milk Replacer/Calf Feed		\$0.00	lb.	0.0	\$0.00	\$0	\$0	\$0	\$0.00	200.00 lb.
Total Feed Costs =					\$11.97	\$2,356	\$282,724	\$336,280	\$1,558	6.55 tons/hd
Livestock Costs									Livestock Costs	
Dairy Supplies		\$120.00	head	1.00	\$0.61	\$120	\$14,400	\$14,744	\$10.00	head
Freight/Trucking/Hauling		\$0.15	cwt	180.00	\$0.14	\$27	\$3,240	\$3,412	\$5.00	head
Veterinary & Medicine		\$0.45	cwt.	180.00	\$0.41	\$81	\$9,720	\$11,095	\$40.00	head
Breeding Fees		\$0.48	head	1.00	\$0.00	\$0	\$58	\$1,261	\$35.00	head
DHIA/Accounting/Legal		\$29.00	head	1.00	\$0.15	\$29	\$3,480	\$3,583	\$3.00	head
Marketing		\$0.30	cwt	180.00	\$0.27	\$54	\$6,480	\$6,514	\$1.00	head
Bedding Costs		\$90.00	ton	0.33	\$0.15	\$30	\$3,564	\$5,111	\$45.00	0.5 ton
Gas/Fuel/Oil		\$3.80	gal.	12.00	\$0.23	\$46	\$5,472	\$6,648	\$34.20	9 gal.
Electricity		\$0.10	kWh	540.00	\$0.27	\$54	\$6,480	\$7,082	\$17.50	175 kWh
Other (oper. int., phone)		\$90.00	head	1.00	\$0.46	\$90	\$10,800	\$11,144	\$10.00	head
Facilities & Equipment Costs Use a % of value for Depreciation, Interest, Repairs, Taxes & Insurance									Facilities & Equipment Costs	
Milking Center/Parlor		\$800	head	12.0%	\$0.49	\$96	\$11,520	\$11,520		
Dairy Housing		\$1,600	head	10.0%	\$0.81	\$160	\$19,200	\$19,200		
Manure Storage/Handling		\$600	head	10.0%	\$0.30	\$60	\$7,200	\$8,932	\$50.40	\$0.07 head
Heifer Housing								\$4,950	\$144.00	\$0.20 head
Machinery and Equipment		\$1,500	head	18.0%	\$1.37	\$270	\$32,400	\$32,895	\$14.40	\$0.02 head
Investment/Cow	\$4,500									
Use a % of value for Interest and Insurance										
Cow Ownership Costs		\$1,300	cow	5.50%	\$0.36	\$72	\$8,580	\$10,232	\$99.00	Ownership Cost/hd
Heifer Replacement Costs		\$1,350	/heifer		\$1.85	\$365	\$43,740		\$250.00	Initial Value
Labor and Mgt Costs		\$12.00	hour	42	\$2.56	\$504	\$60,480	\$69,555	\$264.00	22.00 hrs/hd
Total Expenses*					\$22.41	\$4,413	\$529,538	\$618,241	\$2,581	Total
Net Returns after all Cost including Labor & Assets*					-\$0.91	-\$180	-\$21,548	-\$21,426	\$2,581	Adjusted
										/\$day

## Looking for the Best Deals on Feed? *by Larry Tranel, Dairy Field Specialist, NE/SE Iowa*

As high feed prices continue, the FEEDVAL program becomes a necessary tool to assist in finding which feeds are a good buy relative to our main feedstuffs such as corn, soybean meal, etc. In the table below, each feed is listed with energy and protein parameters along with its current price per unit as of October, 2012. Based on its energy and protein parameters, FEEDVAL then predicts its value in dollars per unit and then lists its actual price as a percent of predicted value.

Any time we are buying feed, remember the importance of knowing moisture content of the feed you are purchasing. For example, wet distillers can vary in percent dry matter. This variation can change whether the per ton price as is becomes a good buy or not. If FEEDVAL says it's a good buy at a certain moisture, a change of percent moisture can change that.

<b>FEEDVAL 2012</b>						<b>Price</b>		<b>Predicted</b>	<b>Actual Price as %</b>
<b>Ingredient</b>	<b>RUP%</b>	<b>RDP%</b>	<b>NEI3x Mcal</b>	<b>peNDF%</b>	<b>DM%</b>	<b>\$/Unit</b>	<b>Unit</b>	<b>Value \$/Unit</b>	<b>of Predicted Value</b>
Shelled Corn	4.5	4.5	0.91	0	89	\$7.92	bu	\$7.23	110 %
Soybean Meal 48%	21	33	1	0	89	\$491	ton	\$472	104 %
Soybean Meal 44%	17.5	32.5	0.97	0	89	\$441	ton	\$433	102 %
Soybean Meal, expeller	30	16	1.09	0	92	\$466	ton	\$565	83 %
Soybeans, raw	12	28	1.25	0	87	\$543	ton	\$432	126 %
Soybeans, heated	22	21	1.24	0	92	\$700	ton	\$535	131 %
Good Quality Hay	6	14	0.6	35	87	\$249	ton	\$214	116 %
Poor Quality Hay	4.8	11.2	0.5	50	87	\$180	ton	\$178	101 %
Corn Silage	2.8	4.2	0.67	30	35	\$60	ton	\$75	80 %
Distillers Dried Grains	15	15	0.9	0	89	\$275	ton	\$367	75 %
High-Moisture Corn	3.6	5.4	0.95	0	70	\$200	ton	\$205	97 %
Tallow	0	0	2.06	0	99	\$25.00	cwt	\$26.53	94 %
Blood Meal	76	19	1.06	0	94	\$1,000	ton	\$1,010	99 %
Urea	0	287	0	0	99	\$500	ton	\$511	98 %
Straw	4	1	0.45	75	85	\$140	ton	\$143	98 %
Soy Hulls	6	8	0.67	0	89	\$200	ton	\$222	90 %
Corn Gluten Feed	7.5	16.5	0.79	0	89	\$252	ton	\$276	91 %
Canola Meal, expeller	17	21	0.8	0	89	\$345	ton	\$371	93 %
Canola Meal, solvent	13.5	24.5	0.74	0	89	\$400	ton	\$331	121 %
Cottonseed Meal	20	25	0.78	0	89	\$338	ton	\$400	85 %
Wheat Middlings	4.5	14	0.76	0	89	\$240	ton	\$239	101 %
Whole Cottonseed	6	18	0.88	22	89	\$292	ton	\$289	101 %
Hi-Pro Distillers	22	22	0.9	0	89	\$300	ton	\$441	68 %
Wet Distillers	12	18	0.92	0	45	\$114	ton	\$177	64 %
Brewers Dried Grains	15	15	0.78	0	89	\$250	ton	\$339	74 %
Wet Brewers	12	18	0.78	0	25	\$75	ton	\$89	84 %
Malt Sprouts	9	21	0.68	0	89	\$250	ton	\$272	92 %
Sunflower Meal	8	21	0.63	0	89	\$365	ton	\$251	145 %
Beet Pulp	5	5	0.67	0	89	\$150	ton	\$208	72 %
Hominy	4	8	0.86	0	89	\$245	ton	\$248	99 %
Linseed Meal	16	16	0.72	0	89	\$327	ton	\$336	97 %
Molasses	2	4	0.8	0	89	\$160	ton	\$210	76 %
Corn Gluten Meal	42	23	1.08	0	89	\$812	ton	\$663	123 %
Wheat Bran	3.5	14	0.73	0	89	\$240	ton	\$223	108 %
Whey	1	9	0.85	0	20	\$58	ton	\$49	118 %
Oats	4.5	8.5	0.81	0	89	\$244	ton	\$241	101 %
Wheat	4.2	10	0.91	0	89	\$8.49	bu	\$7.40	115 %
Barley	3.4	9	0.85	0	89	\$15.50	cwt	\$12.08	128 %

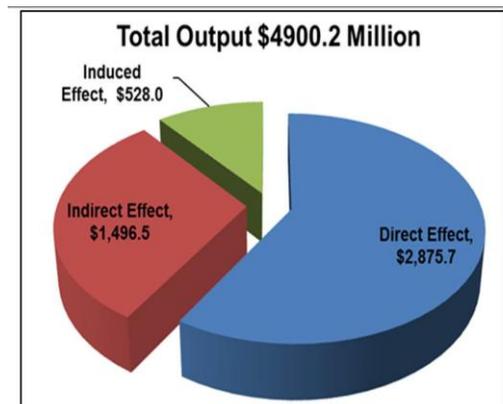
# Iowa's Dairy Industry and Iowa's Dairy Survey 2012 by Leo Timms, ISUEO Dairy Specialist

Iowa's Dairy Industry – An Economic Review was a study and publication completed in early 2012 by the Value Added Agriculture Program in conjunction with ISUEO dairy extension specialists. Focus of this work was to examine and showcase the major reasons why the Iowa Dairy industry is so successful and attributes that make Iowa is a competitive and enticing place to dairy.

The second half of the publication examines the economic impact that the dairy industry has on the state of Iowa and local communities. This was accomplished through use of an IMPLAN model which accounts for the economic value of the raw product (milk), its associated value added products and income ; as well as purchased inputs, supplies, services, etc. used by dairy producers (community economic stimulation) Study was based on 2010 data. Below are highlights of the economic study.

- \$7.5 million of dairy sales.
- \$1.2 billion value added dairy products.
- **\$4.9 billion total economic effect**
- \$914 million of earning (salaries/wages)
- 22,263 jobs associated with dairy
- 1 of 5 of the largest Iowa commodity organizations.

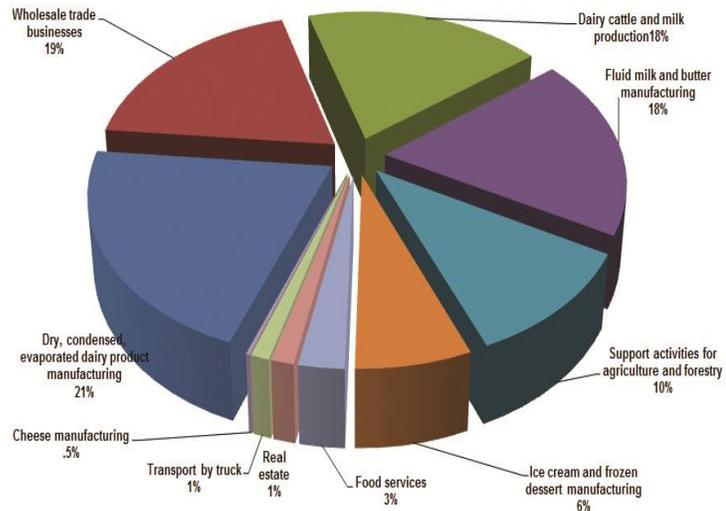
Chart below shows **total dairy economic output of \$4.9 billion**. **Direct effects** are economic impacts generated directly by the dairy industry. **Indirect effects** are generated by purchased goods and services by the industry. **Induced effects** are impacts generated by purchased goods / services outside industry like grocery, education, etc.



Overall economic results / impacts are shown below::

- **Each cow** generates **\$23,445** of economic impact and value to a community.
- **10 cows generate 1 FTE full time job.**
- **>22,000 jobs** supported by dairy industry.

## Economic Output Effect of One Dairy Cow in Iowa = \$23,445



## Iowa's Dairy Industry and Dairy Survey: Leo Timms

Certainly the Iowa Dairy industry has changed over the decades, and will continue to change and adapt to markets, prices, and preferences. ISUEO dairy extension works closely with the Iowa Department of Agriculture to monitor industry statistics. Below are some recent IDALS industry statistics:

- **1801 herds (1580 dairy cow; 219 dairy goat; 2 sheep)**
- **204,000 milk cows / 4.5 billion pounds milk/ year**
- **12<sup>th</sup> nationally: milk production and cow numbers**
- **10<sup>th</sup> nationally: milk / cow / year 21,309 pounds**

ISUEO Dairy team has also been instrumental in surveying the industry regarding demographics, principles and practices, and evaluating current and future needs. They completed a dairy industry survey in NE IA in 2000 and a statewide survey in 2005. In 2012, a comprehensive statewide survey was conducted based on input and questions across the whole industry. 1000 dairy producers were statistically random sampled and 38% (371) completed the survey. Below are some survey statistics.

- Average dairy producer age: **51 years old** ( range 20-70+)
- 74% satisfied / very satisfied with quality of life
- 72% same or improved quality of life over past 5 years
- **Herd size:** < 50 25%; 50-99 36%; 100-249 26%; 250-499 8.5%; 500-999 2.8%; 1000+ 1.7
- Same herd size distribution compared to herds in 2006
- Lower % dairies < 50 cows compared to 2007 Ag census
- 40% tie stall; 60% free stall; 28% updated facilities past 5 yr
- 32% plan to expand (63% in next 5 years)
- For more information on dairy economic review and survey: <http://www.extension.iastate.edu/dairyteam/publications>