



**Larry Tranel**



**Jenn Bentley**



**Kevin Lager**

## **Feed Prices Help Relieve Dairy Budgets**

Finally, relief is coming to the high feed prices we have been experiencing in the dairy industry. Dairy budgets have improved towards the end of the year so hopefully your dairy profits did as well.

The new year is a good time to analyze last year's profitability through our Dairy TRANS program so let us know if we can help analyze last year's numbers.

### **Alfalfa**

Hay prices and supply are still of concern as we lost about 20% of our alfalfa acres in the Midwest over the past ten years. It may take some time to recover yet. The ability to grow protein and fiber with high quality alfalfa is still pretty economically competitive relative to corn silage and grain crops. Read more in the "alfalfa" article inside.

### **Heifer Raising Costs**

The cost of raising dairy heifers is always a popular question for dairy producers and custom growers wanting to know what it costs to raise those extra heifers or a fair price to pay a custom raiser. Check the fact sheet inside for the details and a thumb-rule slide guide.

### **Dairy Days and Other Meetings**

Dairy Days will again be coming to our dairy hotspot areas in NE, SE and NW Iowa. Check out the dates and locations of these and other meetings inside this issue. .

### **Have a Very Merry Christmas Season and New Year!**

Sincerely,

**Kevin Lager**

ISU Extension Dairy Field Specialist, NW Iowa

**Jenn Bentley and Larry Tranel**

ISU Extension Dairy Field Specialists, NE and SE Iowa

## **It's the year to Focus on Raising Better Heifers!**

As you peruse our Dairy Extension programs this year you hopefully would get a sense that it is a year to for us to focus on raising our future dairy replacements. With costs of raising heifers higher than their current market value if sold, judicious and precision management is needed as there are many ways to add value to these heifers before they join the milking string.

### **On-Farm Calf Workshops**

Check inside to get a first-hand look at how fellow dairy farmers are using technology, especially pasteurizers and auto-calf feeders to help manage their calf program. On-farm calf workshops will be held in both NE and NW Iowa so check out the promotion inside.

### **What's It Cost to Raise Heifers?**

Inside is a new 2013 dairy heifer raising budget to assist your own determination on what it costs you to raise heifers. This budget can be available as a spreadsheet through your dairy or farm management field specialists and is part of the ISU Extension dairy cow budgets, which are also available to you. If you would like assistance in knowing your costs of raising heifers or producing milk, simply let us know and we will assist you as best we can.

### **Dairy Webinar Series -- Dairy at Noon**

Please mark your calendars for noon webinars on March 13, 20, and 27 and join the ISU Extension and Outreach Dairy Team as they discuss issues surrounding calf management and feeding systems. Topics will include early life management factors, facilities and ventilation, and automatic calf feeder management. Presenters will include Howard Tyler, ISU Professor of Animal Science, Lee Kilmer, ISU Extension Dairy Specialist, Jenn Bentley, Extension Dairy Specialist, Dan Huyser, Extension Ag Engineer, and Rebecca Brotzman, Outreach Specialist at the Dairyland Initiative.

This webinar is sponsored by Iowa State University Extension and Outreach and North Central Risk Management Education Center. If you'd like to join the webinar or would like more information contact Jenn Bentley at [jbentley@iastate.edu](mailto:jbentley@iastate.edu) or 563-382-2949.

## December, 2013 Dairy Market Update

by Kristen Schulte, Farm and AgBusiness Management Field Specialist, ISU Extension and Outreach, NE Iowa

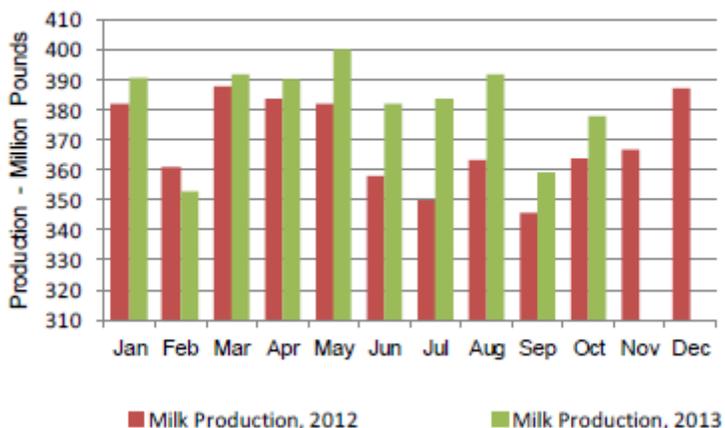
### U.S. Milk Production

- National milk production was up 1.2 percent compared to 2012 in October.
- National dairy herd has increased by 36,000 cows from a year ago, but has slightly decreased since September.
- State leaders for October milk production gain were Kansas, Indiana, Florida, and Utah with gains between 5.0 and 6.0 percent each.

### Iowa Milk Production

- For October, milk production is up 3.8 percent compared to 2012 for Iowa.
- Producers have added 3,000 cows to Iowa's dairy herd.
- As shown in the graph below, with the exception of February, milk production per cow has exceeded 2012 production each month through October.

### Milk Production, Iowa, 2012-2013



Source: Iowa Ag News, NASS

### Profitability

- Margins improved over the past year. High feed costs of a year ago are less of concern. Milk prices have remained at a level where positive profit margins can be obtained.
- Looking forward to the first quarter of 2014, with an average projected \$19.25 All Milk Price (Class III milk futures adjusted for basis), margins range from breakeven to over three dollars per hundredweight milk for all ISUEO dairy budgets, pasture and conventional basis. This is an improvement from a year ago when projected budget margins were near, at, or below zero.
- Sustained demand helped to lift milk prices to levels where feeding grown commodities will return a larger profit in times where grain commodity prices are nearing cost of production.

## Determine a Feeding Program for your Automatic Calf Feeder

by, Jennifer Bentley, ISU Extension and Outreach Dairy Specialist

As producers learn how to manage automatic calf feeders, the industry is developing recommendations as guidelines that are proving successful. Before it can be decided which program is right for a farm, calf growth goals and management style need to be evaluated. A good rule of thumb for Holstein calves is to double their birth weight by 60 days of age. This will help determine days to weaning and overall cost of the feeding program. Feeding recommendations can be broken down into three categories; conservative, progressive, and aggressive.

A conservative program provides growth economically while producing healthy calves. A typical milk replacer is a 20:20, fed at a rate of 1.5 lbs. of powder in 5L per day. Access to fresh calf starter early on is important as they will consume the most calf starter in this program. In an auto feeder setting with a conservative program, there tends to be more competition at the feeder, more cross sucking and tail biting, and is not ideal for an auto feeder situation.

A progressive program provides good growth potential at an intermediate cost. A typical milk replacer fed is a 24:20, fed at a rate of 1.5-2.0 lbs. of powder in 5-7L per day. A progressive program optimizes the use of the feeder, minimizes competition, and provides efficient growth at a moderate cost. This program needs to be monitored closely and adjusted based on health and performance of calves; a good fit for auto feeders.

An aggressive program provides maximal growth and future production potential. A typical milk replacer fed is a 28:18, fed at a rate of more than 2 pounds of powder in 8-10L per day. An aggressive program will maximize growth in the first 8 weeks while weaning the largest calves. It is important that calves are well bedded due to higher consumption rates of liquid. This program has the highest initial cost, but could potentially have the best return on investment depending on other management factors on the farm.

Pasteurized waste milk is another option that provides good growth potential at an intermediate cost if managed properly. Depending on nutrient content, it is fed at a rate of 5-10L per day. Storing and cooling of milk pre and post pasteurization are key elements to maintaining quality and require more management.

Keep in mind adequate colostrum, space, ventilation, and monitoring of the system are key to any successful program and should be reviewed with appropriate industry personnel.

*This article is adapted from information taken from Auto-Feeder Meeting in Rocky Mount, VA presented by Bob James, Virginia Dairy Extension*

## ***NE On-Farm Calf Feeding Workshops***

**Monday, Feb. 10<sup>th</sup>** 10:30-11:30 am at **Kevin & Gayleen Moellers**, 2845 310th Avenue, **Ridgeway, IA**. From Ridgeway, take Hwy 9 west for 2 miles, then turn right onto 310th Street, drive 2 miles and calf barn is on the left. GEA Auto-feeders utilizing pasteurized milk in a cross-ventilated facility.

**Monday, Feb. 10<sup>th</sup>** 1:30-2:30 pm **Paul & Jody Stempfle**, 16707 100th St. **Maynard, IA**. From West Union, follow Hwy 150 South for 13 miles, then turn right onto 100th Street/Hwy 150 for 5.7 miles, farm is on the left. New individual stall calf barn utilizing a Milk Taxi for transport and pasteurization of milk.

**Tuesday, Feb. 11<sup>th</sup>**, 10:30-11:30 am, **Pattison Dairy** 22127 Hwy. 52, **Garnavillo, IA**. From Postville, follow US 52/US 18 east 15 miles, then turn right onto Hwy 52 for 6.9 miles, farm is on the right. GEA Auto-feeders utilizing pasteurized milk in a hoop building.

**Tuesday, Feb. 11<sup>th</sup>**, 1:30-2:30 pm, **Gibbs Dairy** 1780 Gronna Drive, **Waterville, IA**. From Hwy 18, Monona, turn north on CR-X26/Falcon Avenue for 11 miles, then turn right onto IA-76 for 1.4 miles, turn left onto Waterville Rd/CR-X32 for 3.7 miles, then left onto Main St/Waterville Rd. for 2.6 miles, and right onto Gronna Drive for 0.6 mile, farm will be on the left. DeLaval Auto-feeder in a cross-ventilated facility.

**Monday, Feb. 17<sup>th</sup>**, 10:30-11:30 am, **Virgil and Judy McNamara Dairy**, 15213 County Road X31, **Anamosa, IA**. From Anamosa go west on E Main St/CR-E28 turn right onto N Ford St/CR-X31 to 15213 CR-X31. Auto-calf feeder in new facility.

**Monday, Feb 17<sup>th</sup>**, 1:30-2:30 pm, **Stoll Farms**, 19995 Ebys Mill Road, **Cascade, IA**. Take Hwy 136 south of Cascade, 1.4 mi, Turn right onto Ebys Mill Rd. go 3 mi Ebys Mill Rd becomes Richland Rd. and go for .7 miles then returns to Eby's Mill Road. Auto calf-feeder in remodeled facility.

**Tuesday, Feb 18<sup>th</sup>**, 10:30-11:30 am, **Strief Dairy**, 26250 Farm Lane Road, **Farley, IA**. From Hwy 20 go south on East Pleasant Grove Road 3.5 miles, right (west) to 26250 Farm Lane Road. Pasteurizer and auto-calf feeder in new facility.

**Tuesday, Feb. 18<sup>th</sup>**, 1:30-2:30 pm, **Domeyer Dairy**, 26862 Thunder Road, **Holy Cross**. From Main St. in Holy Cross, go left and head northwest on Thunder Road. Auto-calf feeder in remodeled facility.

## ***NW Iowa Calf Tours—Hold the Dates!***

March 5<sup>th</sup> and 6<sup>th</sup> will be the dates for on-farm calf tours in NW Iowa. Contact Kevin Lager in the Sioux County Extension office for more information at 712-737-4230 or [klager@iastate.edu](mailto:klager@iastate.edu).

## ***Dairy Extension Calendar Update***

### ***I-29 Dairy Conference***

January 15 – 16 – Best Western Ramkota Inn and Conference Center, Sioux Falls, South Dakota

### ***Northwest Iowa Dairy Days***

Feb. 25 – Forster Community Center, Rock Rapids  
Feb. 26 – Sioux County Extension Office, Orange City

**Topics to be Determined.** For more information contact Kevin Lager at 712-737-4230 or [klager@iastate.edu](mailto:klager@iastate.edu).

### ***Northeast Iowa Dairy Days***

9:30 am Registration & Refreshments  
10:00 am-3:00 pm: Program

- Grass/Legume Forage Mixtures for Dairy
- Contracting Corn Silage for Your Dairy
- Top Legal Issues Dairy Producers Should Know
- Calf Management Practices Survey
- Leave No Dairy Calf Behind
- Calf Facilities and Repurposing Buildings
- Optimizing Your Heifer Enterprise
- Dairy Herd Management Survey of Practices

A \$15 registration fee for meal and materials. Vouchers available from local agri-business.

### **Dairy Days will be held at the following locations:**

#### **January 20. Riceville**

St. Peter's Lutheran Church, 105 W. 6th Street

#### **January 21. Calmar**

NE Iowa Dairy Foundation Center, Hwy 150 South

#### **January 22. Waverly**

Civic Center, 200 1st Street NE

#### **February 3. Bloomfield**

Davis County Extension Office  
402 East North Street

#### **February 4. Kalona**

Chamber of Commerce, 514 B. Avenue

#### **February 5. Holy Cross**

Neumann's Bar & Grill, 927 Main Street

#### **February 6. Ryan**

American Legion Hall, 210 Main Street

***Please plan to join us at the 2014 Dairy Days!***

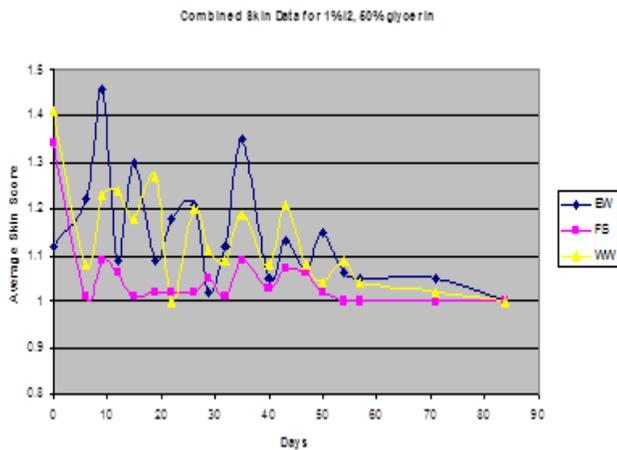
# ISU DAIRY UPDATES

Leo Timms, ISUEO Dairy Specialist

## HEALTHY TEATS IN COLD WEATHER

Wow, another 2.5" of snow last night and temperatures dropping to 0 or below tonight. These conditions remind us of the importance of teat dipping and other practices that keep teats and mammary glands healthy through winter challenges.

Although teat dip choice is important, it is often other factors that need to be controlled and influence teat health during winter. The following graph shows teat end health in 3 different facilities all using a high emollient winter dip during January - March 2012.



Producers need to realize changes will occur during winter, assess their own farm condition (housing, weather, wind) and be judicious in determining conditions requiring changes to dips and practices.

- **Minimize direct wind exposure post milking, and exposure to drafts in barns**
- **Clean dry stalls to prevent chilling as well as mastitis organism growth**
- **Excellent milking techniques and properly functioning milking equipment**
- **Minimize other teat stressors.**
- **Achieve the above, then choose your dips.**

<http://www.extension.iastate.edu/dairyteam/milk-quality-mastitis> (Winter Teat Dipping 2013)

## ISU RESEARCH UPDATE: TEAT HEALTH

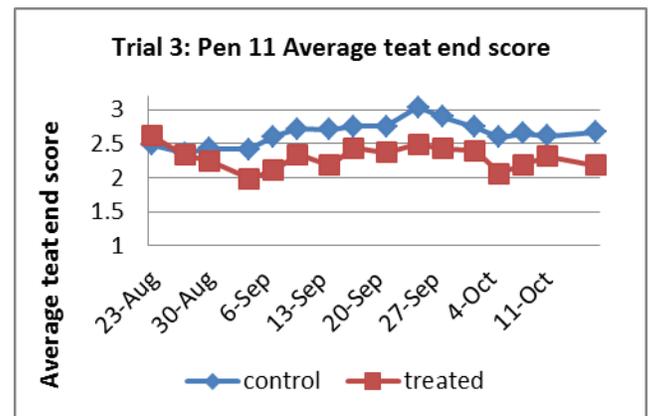
Iowa State University's Dairy Team is a leader in research that develops, evaluates, and or validates teat end /teat skin health and condition on many new dips and products, working with companies nationally and worldwide. They are the leaders in extension and technology transfer also.

The ISU Dairy farm provides the setting (cows, parlor and milkers) where 10- 20 trials are conducted annually. The model developed is a half udder design (different dips are applied to half the teats with control commercial teat dips on other). Teats are scored intensely (2-3X weekly. This allows the animal to serve as her own control and the ability to find even subtle differences. Below is 2012 summary.

- 19 lactating cow trials; 30 dips / compounds
- 5 winter dips trials and associated strategies, 11 new liquid lactating cow dips trials with different germicides, 3 barrier dip trials
- 5 industry partners; 4 new commercial dips
- 8 dry cow sealant dip trials

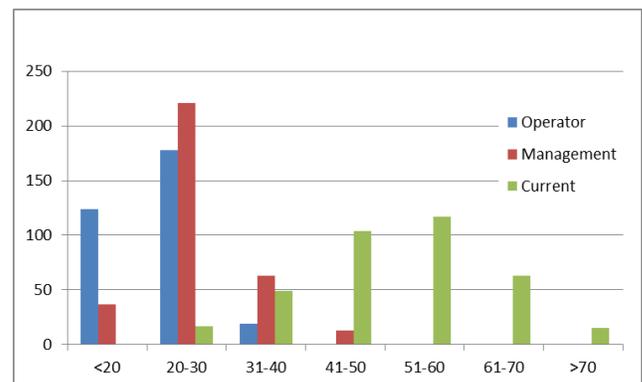
Below is a graph from a recent trial examining a new chlorine technology that creates on-farm germicides. Teat health was significantly better than even the excellent commercial teat dips. For more results, access ISU Animal Industry Reports:

<http://www.ans.iastate.edu/report/air/>



## ISU DAIRY SURVEY: TAKE A LOOK!!!

Who's male, 51 yrs. old, high school degree, 26 yrs. of management experience? An average Iowa dairy farmer!!! Awesome but who's average?



Age when you first became a dairy farm operator?  
Started to manage dairy? Current age?

For more information on the Iowa dairy industry and the 2012 survey visit:

<http://www.extension.iastate.edu/dairyteam/publications>

## Evaluating Your Estate Plan

Evaluating Your Estate Plan Workshops will be held in the following communities in January, 2014:

- Jan 21: Council Bluffs/Pottawattamie County
- Jan 27: Grundy Center/Grundy County
- Jan 29: Independence/Buchanan County
- Jan 30: West Bend/PaloAlto-Kossuth County
- Jan 31: Forest City/Winnebago County

For more information contact Melissa O'Rourke by email at [morourke@iastate.edu](mailto:morourke@iastate.edu) or call 712-737-4230.

## Dairy Foundation Annual Meeting and Open House, March 27<sup>th</sup>

Join us on March 27<sup>th</sup> for the Annual Meeting of the NE Iowa Dairy Foundation. After the meeting join us for the Open House to showcase the Robotic Milking Addition from 2-7 pm. For more information call 563-534-9957 or visit [www.iowadairycenter.com](http://www.iowadairycenter.com).

## Dairy Calf and Heifer Grower Conference, Green Bay

The 2014 Dairy Calf and Heifer Association Conference will be held April 1-3, 2014 at the Hyatt on Main in Green Bay, Wisconsin. Highlights include:

- Combined conference room presentations and hands-on demonstrations at some of the industry's best dairy calf and heifer operations.
- Unique, insightful speakers with fresh perspectives.
- An employee track, customized to help train your best calf and heifer staff.
- Multiple networking opportunities with other producers and industry leaders.
- A trade show focused specifically on calf and heifer products and services.
- The DCHA Annual Business Meeting – learn about, and contribute to, our direction.
- Keynote speaker: Donald Driver – NFL superstar, Dancing with the Stars Champion, and author.
- Behind the scenes tour and networking social event at Lambeau Field.

For more information, go to [www.calfandheifer.org](http://www.calfandheifer.org)

## 4-State Dairy Management Conference, Dubuque, June 11<sup>th</sup>-12<sup>th</sup>

Save the date. For more information, visit <http://wiagribusiness.org/fourstate.php>

Sponsored by: Iowa State University Extension and Outreach; University of WI-Extension, University of MN Extension and University of IL Extension.



Risk Management Education for Farm and Ranch Women

## A workshop for farm women interested in management and decision-making in the complex, dynamic world of agriculture.

Annie's Project is offered in many locations across Iowa in 2014. See listing below for locations near you. Register online at <http://www.aep.iastate.edu/annie/>

Learn more at: <http://www.extension.iastate.edu/annie/iowaannie.html>. Other programs focusing on succession planning, financial management, and grain marketing are also available, more information online.

***If you are a farm woman with a passion for business involvement, you need to attend this 6-week course designed just for you!***

### Annie's Project:

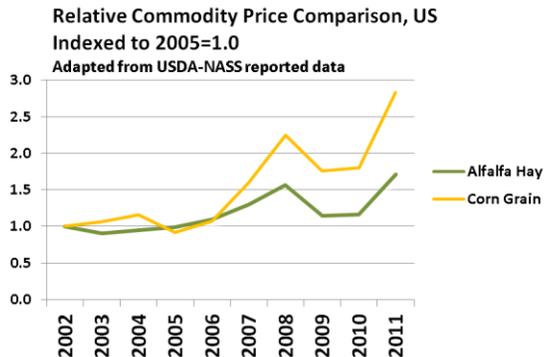
- **Lytton:** Six sessions will be held on Tuesday nights beginning on January 21, 2014.
- **Gilbert:** Six sessions will be held on Monday nights beginning on February 3, 2014.
- **Greenfield:** Six sessions will be held on Thursday nights beginning on February 6, 2014.
- **Dyersville:** Six sessions will be held on Thursday nights beginning on February 13, 2014.
- **Denison:** Six sessions will be scheduled to happen in mid-February 2014.
- **Cherokee:** Six sessions will be scheduled to happen in March 2014.
- **Graettinger:** Six sessions will be scheduled to happen in mid-August 2014.
- **Muscatine:** Six sessions will be scheduled to happen in late Summer of 2014.
- **Akron:** Six sessions will be scheduled to happen in Fall of 2014.

# IS A TURNING POINT FOR ALFALFA ON THE HORIZON?

This article was adapted from an article by Robin Newell, NAFA Chair, DuPont Pioneer Forage Business Manager

*Disclaimer: The views and information presented in this article are subject to change and potential bias, and must not be construed as market forecasts or commodity marketing advice*

Alfalfa is the nation's fourth largest crop at 20 million acres but acres have declined 22% from a decade prior.<sup>1</sup> Much of the decline in alfalfa acres coincided with competition for acres driven by ethanol production in the US, particularly corn in the Midwest. UC-Davis Ag Economist Dr. Leslie Butler observed that new seedings for alfalfa hay production are influenced by competing crop prices during the prior two years. Alfalfa hay acres tend to decline when relative margins for competing crops exceed alfalfa, and vice versa. In essence, Dr. Butler's work noted a two year lag in alfalfa acres in response to the relative value of growing other crops.<sup>2</sup>



Alfalfa production may be slower to respond to market signals than production of annual crops. Will alfalfa acres stabilize or begin to rebound? How soon, and to what extent? And what are the implications for hay markets and dairy producers going forward? To help think about these questions and their implications, here are a few factors to consider:

1. There is a long-term trend in the dairy industry toward feeding more corn silage, for its high productive capacity both in the field and in the milk tank. Corn silage contains valuable energy from grain needed for milk production, and corn grain yields have been increasing. Furthermore, when yields are down in a given area, there's usually more acres of corn available to chop for silage if needed, not strictly limited by corn acres planted specifically with silage in mind.

2. Dairies continue to grow in size. Half the milk produced in the US now comes from herds exceeding 1,000 cows, just 2% of all dairy operations.<sup>3</sup> This trend

<sup>1</sup> 1. National Agricultural Statistics Service (NASS), various reports found at [www.NASS.USDA.gov](http://www.NASS.USDA.gov)

<sup>2</sup> . Butler, Leslie J. "Factors Affecting the Supply, Demand and Price of Alfalfa." Davis, University of California: Department of Agricultural and Resource Economics, 2006.

<sup>3</sup> National Milk Producers Federation. Dairy Data Highlights. Arlington, Virginia, October 2013.

could affect purchased hay and forage markets. Do large dairy farms purchase a high proportion of feed needs on average? Will they prefer to grow corn silage on their farmed land for the dry matter yield and efficiency of one harvest per season? How much hay or haylage will they grow and feed versus substitute commodities for protein and fiber? Will they purchase a greater proportion of hay not grown on their farm?

3. Distillers grains compete with alfalfa as a ration component to some degree (similar protein content but less physically effective fiber). Distillers grains are often priced more advantageously than alfalfa hay on a feed equivalent basis.<sup>4</sup> Availability has grown right along with ethanol production, but nutritionists usually limit the inclusion rate in ruminant rations due to fat content and other factors.

Lower-fat versions are also available, but the fat reduction lowers the feed value. With recent proposed reductions in EPA-mandated biofuels production, the availability of distillers grains could decline if ethanol exports don't take up the potential slack in production capacity for ethanol producers. EPA's proposal is in a public comment phase, and a final decision isn't expected until early 2014. The EPA has the option to re-evaluate the ethanol mandate each year.

4. Environmental Stewardship issues are in the public dialogue, and we can expect continuing legislative proposals aimed at agriculture. Alfalfa can play a beneficial role as a very environmentally friendly crop. Alfalfa has great potential to reduce soil erosion on erodible land. Alfalfa helps reduce the carbon footprint of row crops in rotation through nitrogen fixation that has an N fertilizer sparing benefit for following crops.

Alfalfa fixes a lot of rhizobium-sourced N to produce its high protein yield, but deep alfalfa roots also scavenge N from root depths that exceed other crops. N leaching has been shown to be much less under alfalfa than under row crops such as corn, and can play a role in reducing the nutrient load in our nation's waterways.<sup>5</sup>

Alfalfa is vital for meeting ruminant forage needs in this country. It requires no fertilizer N yet produces more protein per acre than other crops. Alfalfa is useful for both its high protein content and as part of the foundational forage requirement in ruminant rations. Dairymen have a vested interest in alfalfa acreage and alfalfa production in the US. Enjoy your front-row seat as market dynamics of the next few years unfold!

<sup>4</sup> . Normand R. St-Pierre. "Bargains and Rip-Offs: Assessing the Economic Value of Feedstuffs Using Market Prices." Department of Animal Sciences, The Ohio State University.)

[dairy.ifas.ufl.edu/rns/2004/St\\_Pierre.pdf](http://dairy.ifas.ufl.edu/rns/2004/St_Pierre.pdf) See also: Cobanov Branislav, and St-Pierre, Normand. Sesame software. The Ohio State University, Dept of Animal Sciences.

<sup>5</sup> Baker, John, and Russelle, Michael P. USDA-ARS, St. Paul, MN. Personal discussion about the value and benefits of alfalfa in rotations. Feb 7, 2013.

## ***Dairy Farm Employee Management: New Employee Orientation***

You only get one chance to make a good first impression. Employee orientation is the employer's opportunity to make good first impressions on the new employee that set the tone for the employment relationship. Unfortunately, some dairy producers neglect this vital step.

Orientation and training is of particular importance on the dairy farm. While training is an ongoing process that continues throughout employment, the orientation phase begins with the first day on the job and is generally completed within the first week or so of employment. Another article in my Dairy Farm Employee Management series provided tips and guidelines for getting the new farm employee off to a good start on the first day of employment. (See "Getting the New Employee Off to a Good Start on Day One"). That first day on the job will fly by quickly. The smart employer will have a plan in place for orientation and training. This article outlines the purposes and key components of an employee orientation program.

### **Purposes of Farm Employee Orientation**

Employee orientation helps employees become socialized to the dairy farm. This process of socialization reduces a new employee's natural anxiety that comes with starting any new job. A new employee who becomes comfortable in the workplace is more likely to develop and maintain a positive attitude toward the job and the employer. That positive attitude translates into earlier and higher productivity. When the new worker is assisted in becoming quickly familiar with the work environment, the stress level decreases and the individual is better able to learn new job duties, skills and expectations. This socialization aspect of employee orientation prepares a new worker for job training. If a new employee is relieved of general stress and worry, that individual is able to concentrate and absorb substantive information about new job assignments and tasks.

### **Planning and Content of Orientation Program**

If your dairy farm has not previously conducted an employee orientation program, planning may seem overwhelming. One way to think about orientation is to sit down with current employees and ask for input. Ask what they wish they had been told when they first started working in a dairy operation. Find out what they view as important information for newcomers. Every dairy farm is different, but some possible content areas to consider include the following:

**Background and Overview of Your Farm:** Provide new employees with your farm's story – the history and development of the dairy business. This includes information about key people in your dairy's history as well as present-day leadership. Share your farm's mission statement, goals and objectives. While a dairy farm tour may have been part of the pre-employment process, this should be repeated, perhaps over a series of days as the new employee is introduced to the layout of facilities and operations. Throughout the process, emphasize the vital role of employees in the dairy's success.

**Employee Policies:** Even the smallest farm should consider development of an employee handbook or policy document. (See "Do We Need an Employee Handbook?" in the Dairy Farm Employee Management series). All key policies, compensation and benefits information should be reviewed with the new worker. Do not just present the new employee stacks of documents to read. Orientation is the employer's opportunity to review policies, explain rationale and provide opportunities for questions or clarification.

**Introductions:** While the new employee may have been introduced to some individuals during the pre-employment process, introductions should be repeated. Name badges (or embroidered shirts/apparel) can be very helpful on the dairy. Provide the new employee with an organizational chart or list of names. Include names of people who visit the farm on a regular basis such as drivers, veterinarians, suppliers, service personnel, neighbors or relatives.

**Job Duty Information:** While a position description was most likely discussed during the employment process, this is a key part of the new employee orientation phase. Provide the written position description, and use it as a guide to discuss specific tasks including training that will be provided to the new employee. Emphasize basic safety and indicate the importance of ongoing safety training and awareness. Help a new employee to understand the relationship and importance of the position to other jobs and functions on the dairy.

**Dairy Farm Job Mentors:** On the dairy farm, a number of positions are frequently considered as entry level—such as milkers, pushers, feeders and calf care employees. Frequently, such employees are new to the dairy industry. Your orientation plans should include the assignment of a mentor with special responsibility to guide the new worker in the early days and weeks. New dairy employees need particular guidance in the concepts of sanitation, biosecurity and routine in milking and handling procedures. For example, a new employee working as a pusher may not understand the importance of moving cows in a calm, quiet manner so that they are not agitated, impacting production and cow health.

### **Who Should Conduct New Employee Orientation?**

To assure a consistent message to new employees, it is useful to have the same person conduct orientation. However, identifying supervisors or more experienced co-workers to participate in the process – perhaps as a key mentor – will assist in the socialization aspect of orientation. All members of the orientation team should be those who will share a positive attitude with the new employee. The new worker needs to hear constructive, upbeat messages geared toward making those good, early impressions. A well-planned orientation program takes an investment of time and effort on the part of the dairy producer. Providing a positive orientation experience during the early days of employment sets the stage for a satisfying, long-term employment relationship on your farm.

For more information on dairy farm employees contact: management questions.

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

## What's It Cost to Raise Heifers?

The cost of raising heifers is well above their market value. So, growers might consider avenues such as rotational grazing, alternative feeds, intensified feeding, precision feeding, and reducing the number of heifers needed in their quest for best management practices for improving both heifer performance and profits.

An estimated cost of raising heifers is shown in the table on the right. For 24 months of feeding, around six tons of dry matter is needed per heifer for a total feed cost of \$1,224. The livestock costs add another \$273.52. Facilities and equipment add another \$230.60 for a total of \$1,728.12 before heifer ownership cost or labor is considered. This equates to a cost of \$2.37 per head per day without labor on average or a cost of \$2.73 per head per day with labor included.

For custom raisers of calves and heifers this is an important number to know. For those owning and raising heifers from birth to calving for sale, the ownership cost of \$87.50 (interest on investment) and the initial calf value of \$175 in this example needs to be added in to obtain a break-even sale value of \$2,260 over the 24 month period.

It is important to realize that reducing the heifer raising period from 24 months to 23 months saves approximately \$94 per heifer for a total cost of \$2,166 per heifer raised. For a 100 cow herd raising 40 replacements each year, this savings would equal \$3,760 per year.

Reducing the cull rate by 10% would further reduce heifers needed by four thus reducing heifer raising costs by another \$7,964 (\$2,166 -\$175 calf value = \$1,991 x 4). And, studies prove rotational grazing of dairy heifers reduces the cost of raising heifers. So, this budget has 1.25 ton of pasture forage per heifer, else the feed costs would be even higher.

It costs about \$6 per calf per day to raise a calf from birth to weaning. A 56 day birth-weaning period typically has an estimated \$336 of expenses. If this birth-to-weaning cost is subtracted, along with the ownership cost and initial value of the heifer, the cost to raise from weaning-to-calving is \$1,661.50 over 674 days or \$2.47 per day for the average weight heifer.

For custom heifer raisers who obtain the heifers after weaning without taking ownership, the above thumb-rule would be a good starting point for negotiations but could vary depending which costs above feed costs (veterinary, medicine, breeding, and bedding) need to be recovered. Returns to labor and facilities are often very negotiable from one producer to the next depending on opportunity costs of each due to facility age or demand for use.

<i>*Itemized Costs -- 2014</i>	<i>Heifer Raising Budget</i>	
	<i>1 Heifer</i>	<i>for 24 months</i>
<b>Feed Costs</b> (DM = Dry Matter)	<b>Feed Costs</b>	
Hay/Haylage - DM	\$508	2.50 ton
Pasture Forage - DM	\$124.12	1.25 ton
Corn Silage - DM	\$110.45	0.75 ton
Corn Equivalent - US No. 2	\$126.36	26.00 bu.
By Product Feed		
Protein Supplement	\$186.62	720.00 lb.
Salt and Minerals	\$7.56	50.00 lb.
Fat Supplement	\$1.13	3.00 lb.
Milk Replacer/Calf Feed	\$159.84	200.00 lb.
	\$1,224	6.00 DM ton/hd
<b>Livestock Costs</b>	<b>Livestock Costs</b>	
Dairy Supplies	\$10.00	head
Freight/Trucking/Hauling	\$5.00	head
Veterinary & Medicine	\$70.00	head
Breeding Fees	\$42.00	head
DHIA/Accounting/Legal	\$3.00	head
Marketing	\$1.00	head
Bedding Costs	\$100.00	1 ton
Gas/Fuel/Oil	\$15.52	4 gal.
Electricity	\$17.00	170 kWh
Other (oper. int., phone)	\$10.00	head
<b>Facilities &amp; Equipment Costs</b>	<b>Facilities &amp; Equip Costs</b>	
<i>This includes depreciation, interest, repair, taxes and insurance.</i>		Cost/Head/Day
Manure Storage	\$20.70	\$0.03 head
Heifer Housing	\$156.98	\$0.23 head
Machinery and Equipment	\$52.92	\$0.08 head
	<b>\$2.37</b>	<b>Cost/head/day</b>
	<b>\$2.73</b>	<b>with labor included</b>
	\$87.50	Ownership Cost/hd
	\$175.00	Initial Calf Value
	\$264.00	22.00 hrs/hd
	<b>\$2,260</b>	<b>Total Cost (24 mon)</b>
	<b>\$2,166</b>	<b>23 Month Cost</b>

\* ISU Extension Dairy Budget

### Heifer Raising Costs Thumb-Rule Slide Guide

A slide rule for heifer raising costs with labor included would be \$2.45 at 700 pounds with \$0.15 slide down for each 100 pounds under 700 pounds and a \$0.20 slide up for each 100 pounds over 700 pounds. Realize costs vary greatly from farm to farm. Thus, realize this thumb-rule slide guide is just that--a thumb-rule guide. Please calculate your own costs.

by Larry Tranel, Dairy Field Specialist, Iowa State University Extension and Outreach, NE/SE Iowa. ISU Publication LT-14-01.  
[www.extension.iastate.edu/dairyteam](http://www.extension.iastate.edu/dairyteam)

## **Winter Manure Application Information**

by Angela Rieck-Hinz, Program Specialist, and Dan Huyser, Agricultural Engineer, ISU Extension and Outreach

Winter arrived early in Iowa this fall and has left some producers facing challenges with getting manure land-applied before the ground froze. The following article includes information on winter application rules that apply to some dairy farms and some general best management practices for all dairies.

### **Confinement Dairies**

Dairy operations often include a mix of housing systems, animal sizes and manure storage and handling systems. If your dairy is considered a confinement site dairy, one in which there is more than 500 animal units (this is more than 357 mature milking cows or more than 500 heifers or young stock) confined in a totally roofed structure, and your manure is handled as a liquid, then you are subject to the winter application laws for manure in Iowa.

Basically these laws prevent the application of liquid manure from confinement facilities on snow-covered ground from December 21 to April 1 and also prevent the application of liquid manure on frozen ground from February 1 to April 1.

Since the ground is currently frozen, manure application can still take place, but if producers has to switch from injection or incorporation of manure to surface application they need to observe all separation distances for land application of manure. Surface-applied liquid manure must be land applied 750 feet from residences, churches, schools, businesses and other public use areas, and at least 200 feet from water sources and wells, and at least 800 feet from high quality waters.

Although surface application is allowed, producers should take necessary precautions to prevent manure from running off the field and even when following separation distances they can still be responsible for water quality violations or fish kills.

### **Open Lot or Small Confinement Dairies**

All dairies, including those with cows in loafing pens, yards, or small confinement (500 animal units or less) are subject to the land application separation distances to water sources listed above, 200 feet from water sources and wells and 800 feet from high quality water resources if the manure is surface applied.

## **Manure Management Bottom Line:**

***Let's Keep Manure Nutrients in the Field and out of Waterways***

## **Best Practices for Land Application of Manure**

The following best management practices apply to all sources of manure:

- Do not apply manure in the winter.
- Store or stockpile manure in a manner that does not cause runoff
- Do not apply manure immediately prior to a precipitation event, especially if the ground is frozen. This will cause the manure nutrients to quickly move off-site and likely cause a water quality violation.
- Do not apply manure on deep snow cover when warmer temperatures are forecasted. Rapid snow melt can also cause manure nutrients to move off-site quickly.

## **Introducing the Dairy Iowa Profitability Team (DIPT)**

Sometimes dairy producers may need guidance, input, and problem solving advice from their key farm suppliers. They want to improve their profitability and quality of life, but don't know where to start. Here's where the ISU Extension Dairy Team, working with several allied dairy industry reps, can aid the producer to assemble a Dairy Iowa Profitability Team. Your area ISU Dairy Extension Specialist is one person to discuss your challenges with and if needed, they can assist with creating such a team of your key and trusted suppliers. Members to aid would be currently working with the herd and have the herd owner's success in mind.

Let's take for example a dairy producer who is considering expanding someday, but currently has some herd reproductive results less than desired. Whose input would be vital for improving the herd's breeding and conception rates? The herd owner and key herds person are logical. What about their veterinarian who does herd health work....their nutritionist, who does the rations, as it is vital in achieving reproductive efficiency....their AI rep/breeder who provides the technician service and genetics...perhaps they use a custom heifer raiser. All have to be in synch for top results. DIPT members can help facilitate bringing the group together and guide them on the correct path. The emphasis is on problem solving, not finger pointing.

Like a professional football team, each brings their own strengths to the table, with the goal of achieving success for the team. Is this something you have been considering? To learn more about the Dairy Iowa Profitability Team concept, and if it has a place in your operation, contact your ISU Extension Dairy Specialist.

## Value of Dairy Manure

Dan Huyser, Agricultural Engineer, ISU Extension and Outreach, NE Iowa

Dairies produce milk that goes into many good things. Along with this, large amounts of manure are generated. While it is easy to find the value of milk, putting a value on manure can be challenging. Manure contains many different compounds and minerals in both organic and inorganic forms. Many of these can be beneficial if the manure is used as fertilizer on crops.

The level of available nutrients in manure can change considerably from the time it leaves the cow until the plants utilize them. Factors such as the feed inputs, housing facilities used, manure storage practices, and application times and methods all can change the amount of nutrients available. The best indicator of available nutrients is to have the manure lab tested just before being applied. This will provide more accurate information on the manure content than using a book value.

Manure from a storage structure can contain many things. Manure from the livestock, milk house waste, spilled feed, bedding, and runoff from buildings and lots combine to create the material being applied to the crop ground. For the discussion here, the values of liquid dairy cow manure in MidWest Plan Service publication Manure Characteristics (Second Edition) will be used.

In this case, the nutrient concentration for liquid dairy cow pit manure was 31 pounds of total nitrogen per 1000 gallons. Nitrogen is sometimes expressed as Total Nitrogen with the level of  $\text{NH}_3\text{-N}$  or ammonium also stated. Ammonium is the nitrogen form that is readily available to the plant and also to loss. The rest of the nitrogen is in an organic form that has to be broken down or mineralized before it becomes available. The other two commonly tested nutrients in manure are phosphorus and potassium or potash. The phosphorus is expressed as  $\text{P}_2\text{O}_5$  and for this example is at 15 pounds of per 1000 gallons, and potassium or K is expressed at  $\text{K}_2\text{O}$  at 19 pounds per 1000 gallons of liquid manure. The table below shows the potential value of cattle manure right out of the pit. With cattle manure, only 30 to 40% of the nitrogen is available the first year of application, 10% the second year, and 5% the third year. For our examples, 1/3 of the nitrogen will be considered available the first year. 100% of the phosphorus and potassium will be considered available.

**Potential Value of Manure Coming Out of Storage**

Nutrient	Manure Analysis	Nutrients available	Value of Nutrients	Value of 1000 Gallons
Total Nitrogen	31 lbs/1000 gallons	10.33 lbs	\$0.55/lb	\$5.68
Phosphorus $\text{P}_2\text{O}_5$	15 lbs/1000 gallons	15 lbs	\$0.60/lb	\$9.00
Potassium $\text{K}_2\text{O}$	19 lbs/1000 gallons	19 lbs	\$0.55/lb	10.45
Total Value				\$25.13

To put these nutrients to work, the rate of application needs to be determined. Two factors are involved in determining this. The first is the crop requirement based on type of crop and nutrient levels required to achieve a desired yield. The second factor comes from the soil tests. A soil test will show the nutrients present in the soil. A test that indicates adequate levels of a nutrient being present before manure application will eliminate the value of that nutrient from that application. If the current crop can't make use of the added nutrients, then they have no value from the application for that crop cycle.

An example would be a field that has had manure applied every year for several years. A soil test shows that this field has very high levels of phosphorus and potassium indicating there are sufficient levels to meet the upcoming crop's need. Adding more will not benefit the current crop. Any benefits would have to be realized when the phosphorous and potassium is actually used, even if it is years later. The only benefit from manure application would come from the nitrogen in the manure. In a case like this it might be better to apply a commercial nitrogen source and apply the manure where it will be more of a benefit elsewhere. Applying manure just for the nitrogen credits is questionable on a soil that is already heavily loaded with  $\text{P}_2\text{O}_5$  and  $\text{K}_2\text{O}$  from an economic stand point.

**Nutrients for 200 Bushel/Acre Corn with adequate soil Phosphorus and Potassium per Acre**

Nutrient	Corn Requirement	Soil Levels	Additional Nutrients Required	Value of Nutrients	Value of Manure
Total Nitrogen	180 lbs.		????	\$0.55/lb	????
Phosphorus $\text{P}_2\text{O}_5$	75 lbs.	Very High	0	\$0.60/lb	\$0.00
Potassium $\text{K}_2\text{O}$	60 lbs.	Very high	0	\$0.55/lb	\$0.00
Total Value					????

If balancing the manure application rate to fully utilize the applied nutrients while not increasing soil levels, the lowest manure application rate that fulfills a nutrient requirement will be the optimum level. The requirements of nutrients not met would have to be achieved with commercial fertilizer. While not fulfilling all nutrient requirements, the example below shows that there can still be a considerable benefit to a manure application while not raising any of the soil nutrient levels. In this example, 60 pounds of potassium is required from manure that contains 19 pounds of potassium per 1000 gallons of liquid manure. Dividing the 60 pounds required by the 19 pounds of potassium per 1000 gallons will equate to 3.15 1000 gallon units or 3150 gallons per acre of manure. This application rate will provide the needed potassium without applying excessive phosphorus.

#### Nutrients for 200 Bushel/Acre Corn Balanced for Maintaining Nutrient Levels per Acre

Nutrient	Corn Requirement	Application Rate	Applied Nutrients Available	Value of Nutrients	Value of Manure/acre
Total Nitrogen	180 lbs.	3150 gallons	32 lbs	\$0.55/lb	\$17.60
Phosphorus P <sub>2</sub> O <sub>5</sub>	75 lbs.	3150 gallons	47 lbs	\$0.60/lb	\$28.20
Potassium K <sub>2</sub> O	60 lbs.	3150 gallons	60 lbs	\$0.55/lb	\$33.00
Total Value					\$78.80

If soil tests indicate low nutrient levels, a greater rate can be applied to build up soil levels. This situation will result in more long term benefits from the manure. Nutrients added to build up the soil levels will be available in future years even though they aren't economically beneficial during the crop cycle following manure application. Figuring in long term benefits, the chart shown below is based on a heavier manure application that will provide higher levels of phosphorus and potassium than required for the current crop. There will be 62 pounds of nitrogen available the first year, 10% of the applied nitrogen becoming available the second year or 6 pounds, and 5% the third year or 3 pounds. Over three years, there will be 71 pounds of nitrogen available for use by crops from this application of manure. When subtracting the current crop's nutrient requirements from the available nutrients, there will be 15 pounds of P<sub>2</sub>O<sub>5</sub> and 54 pounds of K<sub>2</sub>O available for future years. The value of the manure over three years will be \$155.75.

#### Nutrients for 200 Bushel/Acre Corn with Low Soil Phosphorus and Potassium per Acre

Nutrient	Corn Requirement	Soil Levels	Application Rate	Applied Nutrients	Value of Nutrients	Value of Manure
Total Nitrogen	180 lbs.		6000 gallons	71	\$0.55/lb	\$39.05
Phosphorus P <sub>2</sub> O <sub>5</sub>	75 lbs.	Low	6000 gallons	90	\$0.60/lb	\$54.00
Potassium K <sub>2</sub> O	60 lbs.	Low	6000 gallons	114	\$0.55/lb	\$62.70
Total Value						\$155.75

There are other things to consider when deciding the value of the nutrients in manure. The distance manure has to be hauled may make application to a distant field not pencil out. If the manure is being sold, hauling costs need to be considered as the time, labor, fuel, and equipment wear costs can be greater than the nutrient value in the manure. The value of added nutrients also needs to be considered when applying manure to rented ground. Will the current tenant receive the full value from the manure application or will a future tenant receive the benefits of nutrients from previous manure applications?



Added organic matter to the soil can be a positive benefit that is hard to value on. Compaction and added weeds are negatives that need also to be considered. The fact that the manure has to go somewhere to empty storage structures and just being able to get rid of it is worth something, if only peace of mind. While every situation is different, manure has the potential to become an asset for many farms.

*"You Been Farmin' Long? These poster kids are now grown up!"*

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