The Heifer Markets Changed So Quickly

Many who attended our Dairy Days session this past winter remember our comments that at current market prices it is cheaper to buy heifers than raise them as budgets showed up to $1,000 per head difference in the cost of raising versus buying. But, in the course of a few months, the purchase price of heifers has increased dramatically, much closer to their cost of raising.

Meanwhile, as reported by Dave Natzke, Editor, Dairy Herd Management Magazine, replacement dairy cow prices jumped to levels not seen since 2008. U.S. quarterly replacement dairy cow prices averaged $1,810/head in April, up $370/head from January. The last time the U.S. average replacement cow price topped $1,800 was in October 2008. The average has been between $1,240-$1,480 for 20 consecutive quarters.

The Dairy Beef Markets Continue their Highs

In the case of cull cows, prices continue to set new record highs seemingly every month. Estimated U.S. April 2014 cull cow prices (beef and dairy combined) averaged $104.00/cwt. The average is up $2.00/cwt. from March’s revised estimate, and $21.60/cwt. more than April 2013. At that price, a 1,300-lb. cull cow is worth $1,352.

So, with high replacement and cull prices and the expansion that seems to be going on, it is hoped the exports continue and dairy remains profitable for 2014 and beyond.

Sincerely,

Kevin Lager
ISU Extension Dairy Field Specialist, NW Iowa

Jenn Bentley and Larry Tranel
ISU Extension Dairy Field Specialists, NE and SE Iowa

Millionaire Model Dairy Farms and Organic Dairy Farms—Profitable and Sustainable!

The Millionaire Model Dairy Farms tracked by ISU Extension and some hand-selected organic dairy farms were analyzed thanks to a grant from the Leopold Center. Even though the financial data is not all tabulated, early signs show organic, conventional and the Millionaire Model Dairy Farms (hybrid of grazing and conventional) all to be both profitable and challenging depending upon farm resources and management itself.

The results of this financial data collection and study will be presented at a Pasture Walk on the Eric and Amanda Gaul farm on Tuesday, June 10, 10am-12 noon. 26946 Dyersville East Road, Farley, IA

In addition to presenting the data, Larry Tranel will also be on hand to discuss ISU Extension and Outreach Organic Dairy Budgets. Eric and Amanda rotationally graze 180 Holsteins and crossbreeds and will lead attendees on a walking tour of their pastureland with a focus on paved surface lanes and waterlines along the pasture.

Directions: From Hwy 52, Holy Cross, turn right (south) onto County Hwy Y13/Holy Cross Road for 6.7 miles. Then turn right onto Dyersville East Rd for 1.4 miles and farm will be on the left. Coming from Farley, go north out of Farley 4.7 miles on County Hwy Y13, then turn left onto Dyersville East Rd for 1.4 miles and farm will be on left.

Other Pasture Walks

Wednesday, August 27, 1-3 PM, Pasture Walk Andy Schaefers Farm
25037 Lake Road, Garnavillo, IA
Topic: Remote paddocks for bred heifers with incorporated water lines and high tensile fencing
Clayton County NRCS to discuss EQUIP programs and pasture mgt.

SW Wisconsin Great River Graziers Schedule -- Click on the following link for information on many pasture walks in SW Wisconsin

Newsletter edited by: Larry Tranel
Today’s current record beef prices helps bring smiles to sellers’ faces, and a chance to analyze how or if, to increase beef income from your dairy operation. This can come from cull dairy cows, newborn and fed dairy steers or heifers, or selling dairy/beef crossbreds. With the lowest beef cow herd since the 1950’s, this creates a real shortage of US fed beef cattle and increases the dairy beef component.

Rust and Abney from Michigan State University estimate that approximately 1/5th of the US cow herd are dairy, and dairy-based steers account for up to 15-20% of the fed steer market. Worldwide developing countries are looking for more meat consumption with their improving economies.

You’ve seen and heard sale barn reports and are probably working through your mind how the beef (non-milk) check figures into your future operating income.

Some points to consider:
- What’s my feed capabilities for more animals
- Can I use the leftover “push up” feed from the cow herd for beef
- How many replacement heifers will I need in the future, and how/if does sexed semen fit into your herd and resulting calves for herd use or sale. (Sexed male beef semen is available)
- Should I consider using heavier muscled beef sires on the lower end of the herd after reviewing birth EPD’s and calving ease data
- Should I sell them soon after birth or raise them to a certain size/weight
- Would a neighboring feedlot like to partner with you on beef
- Should I feed them out all the way to market
- How are my facilities set up for beef
- What are my flexibilities to increase or drop beef production
- Should I dry up and “background” lower end producers before sending to market

In Europe where they mainly eat bull beef, the lower end of the dairy operation is bred to heavy muscled beef sires. There are dairy/beef projects underway with some very large numbers and research data. It wasn’t too long ago, when fed steers ran in the 70’s, and nearly double that today.

We know someday it will change, but in the meantime, a great opportunity for additional farm and family income is in dairy beef. One drawback to the cow herd members--------This isn’t a good time if you are a lower producing, higher SCC, late bred or open dairy animal!!!
Introducing Youth Dairy Challenge

Educating and training the next generation of dairy producers and consumers is important to agriculture and the dairy industry. That is why we want to create an opportunity for youth, beginning in Northwest Iowa, to experience dairy fully. We are inviting all youth in 5th to 12th grade with an interest in a dairy related career to participate, including any in 4-H, FFA, farm experience or not. This is a hands-on, practical application program where youth gain knowledge about dairy, while also practicing critical thinking, problem-solving, team work and communication skills.

The first step in implementing this program is an on-farm Youth Dairy Challenge Day Camp, scheduled for August 2 from 8:00 am to 4:30 pm (location TBD). Topics being addressed will include: feeds and feeding, dairy animal life phases, dairy animal judging, reproduction, facility evaluation, and records and management assessment. For more information about this program, contact Kevin Lager at klager@iastate.edu or (712) 737-4230.

Staying On Top of Manure

Iowa State University Extension and Outreach will be hosting 3 meetings in Northeast Iowa in June. Iowa State University Extension Ag Engineer Dan Huyser will begin by explaining the Clean Water Act and how this relates to the current manure regulations. The meetings will then give livestock producers the opportunity to have the Environmental Specialists from the Iowa DNR field offices in Mason City or Manchester explain the new EPA-DNR agreement made last fall. The specialists will explain the purpose of the new farm inspections, which farms are most likely to be inspected, and the inspection process. They will also answer any questions.

The NRCS will also be present to explain the EQIP program and the areas that a producer can use this program to improve their nutrient management as well as answer any questions. The meetings will be held from 1:00-3:00 PM.

June 3  Borlaug Learning Center at the Northeast Research Farm at Nashua
June 16 FarmTek Classroom, Main Office, Dyersville
June 17 NE Iowa Dairy Center, Calmar

Contact: Dan Huyser, ISU Extension Ag Engineer, 515-298-1731; dehuyser@iastate.edu for information.

NW June Dairy Month Open House

Celebrate June Dairy Month on June 26, 4-7 p.m for Farm Tour, Food and Fun for All at:

Plymouth Dairy Farms, 23505 K-49, Le Mars, IA

2014 Hay Expo

http://hayexpo.com/ June 24-25th, Boone, IA

Dairy Team Website and Calf Materials

Dairy producers are reminded to check the ISU Extension and Outreach Dairy Team website for calf management materials produced this year with our focus on raising better replacements. There are archived webinars, factsheets and other tools for use at: www.extension.iastate.edu/dairyteam

Your Voice for the Iowa Dairy Industry

Please mark your calendar for the next Dairy Iowa Annual Meeting on Wednesday, June 4 at the Heartland Agribition Center in Independence, Iowa. For more information about this Dairy Iowa meeting, please contact Sue Ann Claudon at 515-965-4626 or saclaudon@midwestdairy.com.

NE Iowa Dairy Center Farm Breakfast

Join the Northeast Iowa Dairy Foundation for the 5th annual Breakfast on the Farm Saturday, June 21, 2014 from 8:30a.m.-noon at Iowa's Dairy Center, Calmar, Iowa. We'll serve up a great wholesome breakfast and provide guided tram tours of the nationally-recognized Dairy Center. The kids will enjoy the chance to meet some calves, plus families can visit several educational exhibits, milk a cow and see the newly completed robotic milking units in action. Iowa's Dairy Center is located south of Calmar at 1527 Highway 150 South.

ISU Dairy Farm Breakfast on the Farm!

Friday, June 6th, 6am-11 am

Dairy farm tours 6:30-11 am; (last tours start at 10:30 am)

Ag Discovery Center 7-11am; Great dairy products! Fun for all ages! Please help ISU Celebrate Dairy on the ISU Dairy Farm
The 4-State Dairy Nutrition and Management Conference will be held at the Grand River Center in Dubuque, Iowa, on June 11 - 12, 2014. This year’s program will include:

Wednesday, June 11, 2014
Pre-Conference Symposium Sponsored by Adisseo
- Factors that Affect Vitamin Availability in Feed and Premixes....... Mike Crepreah, Adisseo
- Basic Aspects of Amino Acid Nutrition in Lactating Cattle......... Chuck Schwab, Professor Emeritus, University of New Hampshire
- The Benefits of Feeding Methionine During the Transition Phase Dan Luchini, Adisseo
- Reproduction and AA Balancing......................... Milo Wiltbank, UW

4-State Conference General Session
Dairy Feed Efficiency: Feeding and Genetic Factors
- Improving Feed Efficiency in Dairy Cattle.............................. Mike VandeHaar, MSU
- Will Genomic Selection be the Key to Improving Feed Efficiency in Dairy Cattle?.... Kent Weigel, UW
- Feed Parameters and Strategies on our Dairy Farm.....Doug Block, Hunter Haven Farm, Pearl City, IA

Panel of all Speakers
Breakout Sessions
Room 1 - Wisconsin Cost of Raising Heifers Survey.................. Mark Hagedorn, UW
Room 2 - What Do the Cows Have to Say About NDF and Starch Digestion?..... John Goeser, Rock River Labs
Room 3 - Using Genomics to Improve the Genetic Potential and Management of Your Herd..... Kent Weigel, UW
Room 4 - Transitioning with Efficiency, is it possible?.................. Dr. Phil Cardoso, U of I
Room 5 - What’s New With Corn Silage?.................................. Randy Shaver, UW
Room 6 - (one time) - The Dairy Title of the Farm Bill...................... John Newton, U of I
- (one time) - How are Robotic Milking Dairies Feeding Their Cows Jim Salfer, UMN

Thursday, June 12, 2014
Breakfast Session Sponsored by Quality Liquid Feeds (QLF)
- Milk and Component Pricing in the Four State Area: Current and Future Trends
- Michael Swanson Ph.D., Ag Economist-Senior Vice President, Wells Fargo Bank N.A.

4-State Conference General Session
Calf Management
- The First 60 Days: Can We Make it Better?....................... Sheila McGuirk, UW

State Updates
- Automated Calf Feeder Survey Results............................. Jennifer Bentley, ISU
- Automated Calf Feeder Project Update............................. Marcia Endres, UMN
- Can Amino Acid Supplementation Improve Use of Non-Milk........ Phil Cardoso, U of I
- Proteins in Milk Replacers?
- Real Herds...Real Heifers: The Cost of Raising Heifers............. Mark Hagedorn, UW

Breakout Sessions
Room 1 - Wisconsin Cost of Raising Heifers Survey.................. Mark Hagedorn, UW
Room 2 - Effects of Transition Cow Stocking Density on Behavior and Health........ Marcia Endres, UMN
Room 3 - Transition Cow Health: Meeting the Demands of Lactation while Maintaining a Healthy Liver... Heather White, UW
Room 4 - Economics of Automatic Calf Feeders....................... Jennifer Bentley, ISU
Room 5 - Diagnostic Dilemmas – How to Understand Mastitis..... Diagnostic Results from Diagnostic Labs, Farms and PCR Tests........ Pam Ruegg, UW
Room 6 - Hemorrhagic Bowel Syndrome: Updates and Observations........ Sheila McGuirk, UW

For more information or to register contact:
Wisconsin Agri-Business Association
2801 International Lane, Suite 105
Madison, WI 53704
Phone: (608) 223-1111
Fax: (608) 223-1147
email: denise@wiagribusiness.org
www.wiagribusiness.org

Holstein Convention Moovin’ to Iowa

http://register.2014holsteinconvention.com/
Farm Bill and Changes for Dairy Producers

Kristen Schulte, ISU Extension and Outreach Farm Management Field Specialist

The Agricultural Act of 2014 will bring changes for producers including a new program for dairy producers. The Agricultural Act has multiple programs that can benefit dairy producers, but the highlight is the Milk Margin Protection (MMP) program. Like other government programs, there are new names and acronyms to learn. The common ones associated with the dairy portion of the farm bill are:

- Milk Margin Protection (MMP)
- Actual Dairy Product Margin (ADPM)
- Actual Dairy Production History (ADPH)
- Dairy Product Donation Program (DPDP)

The Milk Margin Protection (MPP) program is open to all producers although they must enroll for a fee of $100 each time they register. Enrollment will occur on an annual basis, and producers can elect to participate or not each year. This program transitions payments from a set payment based on milk price under MILC to a variable payment based on coverage purchased under MPP. MPP utilizes national milk and feed prices to determine an Actual Dairy Product Margin (ADPM). The ADPM is calculated by National All Milk Price – (1.0728 x corn price + 0.00735 x soybean meal price + 0.0137 x alfalfa hay price). The corn and alfalfa hay prices are national average prices determined by NASS, while the soybean meal price is representative of Central Illinois and determined by Agricultural Marketing Service.

A dairy producer can cover 25 to 90 percent of their Actual Dairy Production History (ADPH); coverage can be purchased in five percent increments. A producers ADPH is determined by the highest annual marketing's in the three previous years (2011, 2012, or 2013). New producers can opt to extrapolate milk production to a yearly basis or use a calculated production from national average yield times herd size.

Producers can partake in the MPP by paying premiums to cover percentages of their ADPH at levels of ADPM from $4 to $8 in $0.50 increments. Two different premium structures are offered based on total hundredweight covered above or below four million pounds; premiums paid depend on hundredweight covered in relation to ADPH. For ADPM protection under 4 million pounds, premiums range from $0.00 for $4.00 to $0.475 for $8.00 per hundredweight, and $0.00 to $1.38 premium for coverage above 4 million pounds. Payment is based on two consecutive months (January/February, March/April, etc.) of calculated ADPM below coverage level purchased.

The key for producers to understand with this program is how their Income Over Feed Cost (IOFC) correlates to the calculated ADPM. Therefore, understanding the actual cost of production and feed cost per hundredweight is important to determining if the program is a good fit for each producer. Rules and regulations have yet to be set for producers to enroll in the program; stay tuned to your local FSA office and extension resources for more information.

The Dairy Product Donation Program (DPDP) is a program that helps to control dairy product supply on the market in times of low margins. When ADPM falls below the $4 margin for two consecutive months, the Secretary of Agriculture will announce and implement the program which consists of buying and distributing dairy products.

Rules and regulations will be set in the coming months. More information on the crop and livestock related programs will be available on Ag Decision Maker (www.extension.iastate.edu/agdm) or by contacting your local Farm Business Management Field Specialist. The program Dairy Markets and Dairy Policy through University of Wisconsin, http://dairy.wisc.edu/, also offers a wide breadth of information on dairy programs and policy.

ISU DAIRY UPDATES

Leo Timms, ISUEO Dairy Specialist

TALES OF 2 SEASONS: 2013-14
Teat condition and SCC in WINTER 2013-14

Wow, sure glad winter has finally passed as we all know it broke many records. We saw many record lows and rapid temperature shifts. With that often comes cracked teats and risk of higher SCC.

We had 12 teat dip trials going this winter at ISU including some unique germicides and barrier dip trials. Below is a graph summarizing the % of teat ends that cracked during Dec. – Jan.

Rough / cracked teats should normally be <15%. Early Dec. was already at 19% and every cold snap raised the % (70% by Jan. 25) with some decrease when temperatures moderated. Cracks were very slight or moderate due to good teat dips, milking practices and equipment plus limited drafts and wind chills because of properly curtained facilities. SCC never increased until everything froze for 10 days which made cleaning very hard.
Although we have made great strides in teat dips, milking practices, and facilities, the above graph still shows that weather rules and teats will crack. It also points out how much we’ve learned and implemented the past decade and how important it is to enhance management practices during winter.

**SPRING – SUMMER 2014: Are you prepared?**

In the midst of finally and hopefully ending winter, we have interspersed a few 70-75°F days and it has got fairly warm the past 2 weekends (fans on @ > 68°F because this is temperature that starts to affect cow performance (lactating and dry)). Again weather rules and we manage to minimize effects.

Not sure what the rest of spring – summer will bring but we know there will be some hot times. Are you ready? Are your heat mitigation strategies (fans and misters) and management practices (feeding, bedding, housing, etc) cleaned and tuned up and ready to go?

ISUEO Dairy team conducted a heat stress / heat abatement national webinar 2 years ago and all the materials, factsheets, and guidelines are available on the ISUEO Dairy team website [http://www.extension.iastate.edu/dairyteam/publications](http://www.extension.iastate.edu/dairyteam/publications).

What about milk quality and mastitis prevention issues in lactating cows as well as dry and fresh cows and heifers (riskiest groups)? [http://www.extension.iastate.edu/dairyteam/milk-quality-mastitis](http://www.extension.iastate.edu/dairyteam/milk-quality-mastitis).

**ISU DAIRY REPORTS 2014: TAKE A LOOK!!!**


- **AS Leaflet-R2870** Improving the Accuracy of Genomic Prediction of Milk Fat (Authors: Melanie Hayr, Mahdi Saatchi, Dave Johnson, Dorian Garrick)
- **AS Leaflet-R2871** Quality of Milk from Lactating Dairy Cattle Fed Dried Distillers Grains with Solubles (Authors: Eric Testroet, Gerui Li, Stephanie Clark, Don Beitz)
- **AS Leaflet-R2872** Survey of Veterinarians and hoof trimmers on methods applied to treat claw lesions in dairy cattle (Authors: Katie Kleinhenz, Jan K. Shearer)
- **AS Leaflet-R2873** Utilization of Liquid Chromatography/Mass Spectrometry to Detect Drug Residues in Milk: Applications for Research and Commercial Dairying (Authors: Mike Kleinhenz, Patrick Gorden, Johann Coetzee)
- **AS Leaflet-R2874** Midwest Dairy School Focuses on Generational Transfer (Authors: Jennifer Bentley, Larry Tranel, Kristen Schulte, Kelvin Leibold)
- **AS Leaflet-R2875** Foliar Fungicides in Alfalfa Production (Authors: Brian Lang, Ken Pecinovsky)
- **AS Leaflet-R2876** Tri-State Dairy Youth Expo Hones in on Dairy Judging Skills (Authors: Jennifer Bentley, Ron Lenth)
- **AS Leaflet-R2877** Direct-Fed Microbials Decreases Dry Matter Intake and Increases Feed Efficiency When Fed to Lactating Holstein Dairy Cows (Authors: Matt O’Neill, Mohamed Osman, Eric Testroet, Wanda Kreikemeier, Douglas Ware, Donald Beitz)
- **AS Leaflet-R2878** Low Cost Parlors and Automatic Milking Systems On-Farm Education (Author: Larry Tranel)
- **AS Leaflet-R2879** Low Cost Parlors and Automatic Milking Systems Education Program (Authors: Jenn Bentley, Kevin Lager, Larry Tranel, Leo Timms, Kristen Schulte)
- **AS Leaflet-R2880** Effects of d-α-Tocopherol and Dietary Energy on Growth and Health of Pre-Ruminant Dairy Calves (Authors: Lucas Krueger, Donald Beitz, Ken Onda, Mohammed Osman, Matt O’Neill, Samantha Lei, Robert Stuart, Howard Tyler, Brian Nonnecke)
- **AS Leaflet-R2881** Evaluation of Teat Coverage Persistency and Teat Health for 2 New Prototype & 1 Commercial Dry Period Persistent Barrier Teat Dips (Authors: Melanie Matti, Leo Timms)
- **AS Leaflet-R2882** Evaluation of Teat Coverage Persistency and Teat Health for 2 New and 1 Commercial Dry Period Persistent Barrier Teat Dips (Authors: Melanie Matti, Emily Smith, Leo Timms)
- **AS Leaflet-R2883** Impact of Lameness on Production and Intake in Holstein Cows (Authors: Brittany Shonka, Diane Spurlock)
- **AS Leaflet-R2884** Evaluation of Experimental Chlorine Technology Pre and Post Milking Teat Dips vs. a Commercial Hydrogen Peroxide Pre Dip and Iodine Barrier Post Milking Teat Dip on Teat End and Teat Skin Condition and Health (Authors: Emily Smith, Leo Timms)
- **AS Leaflet-R2885** Development and Evaluation of Experimental Chlorine Technology Pre and Post Milking Teat Dips on Teat End and Teat Skin Condition and Health (Authors: Emily Smith, Leo Timms)
- **AS Leaflet-R2886** ISU Dairy Farm Update 2013 (a Pictorial) (Authors: Joe Detrick, Leo Timms)
- **AS Leaflet-R2887** June Dairy Month Open Houses: Learning Events to Improve Consumer Understanding of Modern Animal Agriculture (Authors: Leo Timms, Kevin Lager, Jenn Bentley, Megan Kregel)
Graze to Reduce Heifer Raising Costs

Intensive grazing of dairy heifers can reduce cost of labor and feed by reducing manure management and the feeding of harvested forages. The table to the right from Cornell University illustrates the dramatic effect rotational grazing can have on reducing heifer costs for various size heifers. If each heifer averages 1.5 grazing seasons before calving using the savings on the average size heifer, total costs per heifer can be decreased by $284 per heifer ($189 x 1.5) or more than 12% over confinement raised heifers using rotational grazing.

Reducing costs of raising heifers by grazing

<table>
<thead>
<tr>
<th>Stage of heifer growth</th>
<th>Feed and Labor, $/day*</th>
<th>Confinement</th>
<th>MIG</th>
<th>Difference</th>
<th>X 150 grazing period</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-700 lb</td>
<td>$2.18</td>
<td>$2.76</td>
<td>$1.30</td>
<td>$0.88</td>
<td>$132</td>
</tr>
<tr>
<td>700-850 lb</td>
<td>$2.18</td>
<td>$2.76</td>
<td>$1.30</td>
<td>$0.88</td>
<td>$132</td>
</tr>
<tr>
<td>850-calving</td>
<td>$2.18</td>
<td>$2.76</td>
<td>$1.30</td>
<td>$0.88</td>
<td>$132</td>
</tr>
</tbody>
</table>

*costs based on 2008 feed and labor costs
Benson, 2012 Cornell Cooperative Extension

If the 150 day grazing season illustrated is lengthened to 210 days, another $75 per heifer could be saved for a total of $360 per heifer or 15% saving over confinement raised heifers.

Reducing costs by grazing heifers on productive crop ground depends on management skills, yield and assumptions used. Two heifer raisers (MN and WI) shared about the same following results from their operations:

Per Acre Returns to a Pasture Heifer Enterprise:

<table>
<thead>
<tr>
<th>Costs</th>
<th>Value of Gain/lb.&gt;</th>
<th>$1.50</th>
<th>$1.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fencing: $75 per acre over 15 years</td>
<td>$5</td>
<td>$5</td>
<td></td>
</tr>
<tr>
<td>Water: $40 per acre over 10 years</td>
<td>$4</td>
<td>$4</td>
<td></td>
</tr>
<tr>
<td>Fertilizer: Only heifer manure was used</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed: $80 per acre over 10 years</td>
<td>$8</td>
<td>$8</td>
<td></td>
</tr>
<tr>
<td>Land Rent: $250 per acre</td>
<td>$300</td>
<td>$300</td>
<td></td>
</tr>
<tr>
<td>Lane: $50 per acre over 10 years</td>
<td>$5</td>
<td>$5</td>
<td></td>
</tr>
<tr>
<td>Grain: (1 lb x 210 days x 1.68/head)</td>
<td>$44</td>
<td>$44</td>
<td></td>
</tr>
<tr>
<td>Labor: (4.5 hours/acre x $10/hour)</td>
<td>$45</td>
<td>$45</td>
<td></td>
</tr>
</tbody>
</table>

A good quality acre can support 1,350 pounds gain per acre. If each pound of gain is worth $1.50, for example, the gross gain per acre is $900. If the gain is only worth $1 per pound (current heifer market prices) the gross gain is $600 per acre.

Health Benefits of Grazing Dairy Heifers

Cornell data showed early lactation health problems were reduced in first calf heifers which were rotationally grazed for 5 months prior to their freshening date, compared to a duplicate group which was raised in confinement prior to freshening. These results were consistent with previous research completed by the University of Minnesota from 2000 through 2002, which also compared raising pregnant dairy replacements in confinement vs. rotationally grazed. Their results showed that the animals raised in intensively grazed pastures had significantly fewer post-partum problems than their counterparts.

NY Study: Health Benefits of Grazing Heifers

<table>
<thead>
<tr>
<th>Farm 1</th>
<th>Animals Treated</th>
<th>Calving Ease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grazed</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td>Confined</td>
<td>25</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Farm 2</th>
<th>Animals Treated</th>
<th>Calving Ease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grazed</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>Confined</td>
<td>25</td>
<td>12</td>
</tr>
</tbody>
</table>

Benson, A. Fay, Cornell, 2009

So, data suggests a reduction in production costs and an improvement in health benefits by raising heifers on pasture. But, the economic and production benefits do not end there.

Weight and milk production gains with heifers raised on pasture compared to confinement have also been realized. In a study by Posner and Hedtke, 2012, (CIAS Research Brief #89), yearling heifers gained 1.97 and 1.86 pounds per day on pasture and in confinement, respectively. For ME Milk production, the first lactation heifers produced 25,328 and 23,415 pounds of milk respectively for those raised on pasture versus those raised in confinement.

Thus, from reducing costs, increasing health and milk production, raising heifers on pasture makes sense.

Factsheet LT-2014-2 www.extension.iastate.edu/dairyteam
by Larry Tranel, Dairy Specialist, Iowa State University
Extension and Outreach, NE/SE Iowa tranel@iastate.edu
Automatic Calf Feeding Systems-Producer Surveys

Introduction
Iowa State University Extension & Outreach conducted a survey in 2013 of producers who utilized an automatic calf feeder system (ACF) on their farm. Twenty producers responded to the survey. The average installation was 2.6 years old. The herds averaged 367 cows; two operations utilized ACFs for bull calves only. The average cost per ACF was $17,301 with software costs included. Two were purchased used with an average price of $5,500. Monthly costs associated with the ACF, excluding milk replacer costs, averaged $55/month. Additional costs included construction of new group housing or adaptation of existing structures to accommodate the feeders. Existing structures remodeled for the ACF included parlor/holding pen, hoop barn, existing building addition, and farrowing house. Average building cost associated with the ACF was $66,643.

Facility Management
Forty-seven percent of the farms used straw for bedding. Ten percent of the farms did not use any bedding as calves were housed on a raised grated floor; remainder of the farms used a combination of straw, sawdust, and cornstalk bedding. Cleaning out group pens varied from every one to two weeks, to every couple of months depending on stocking density. Farms provided an average of 34 square feet per calf.

Ventilation to minimize accumulation of moisture while not causing a draft on the calves is essential and can drive the success or failure of the ACF.

Previous facilities included wooden huts, condos, and individual stalls inside a calf barn where natural ventilation was the primary air flow. New and existing structures utilized a combination of curtain sidewalls and fans for summer ventilation and positive pressure tubes for winter ventilation; two farms utilized a cross-ventilated system.

Automatic calf feeding systems were cleaned frequently with an automatic circuit clean programmed 2-3 times a day and manually cleaning in between. Farms ranged in cleaning nipples and lines from daily to weekly. Lines and nipples were replaced as needed or every four to six weeks. Cleaning solutions included a low acid dilution, soap, bleach and water, or purchased disinfectants.

Colostrum Management
Seventy-one and eighty-two percent of farms administered colostrum within 2 hours after birth when the calf was born between 5-11 am and 11 am – 5 pm. Between 11 pm – 5 am, 5% percent of calves received colostrum within 2 hours, 61% at 2-6 hours and 38% at 6-12 hours after birth. Seventy-eight percent of farms administered 1 gallon or more of colostrum at their first feeding. Sixty-seven percent of farms primarily fed fresh colostrum, 56% occasionally fed frozen colostrum or replacer, and 26% always fed colostrum replacer. Five percent of farms fed pasteurized colostrum.

Eighteen percent evaluated colostrum prior to feeding either visually or use of a colostrometer. Twenty-five percent periodically measured the success of passive transfer of immunity with a refractometer or serum test.

Feeding Management
Before the ACF, all producers fed two times per day with buckets or bottles. Forty-one percent of producers fed a total of 4 quarts per day, while 29% fed 5 or greater quarts per day before the ACF. For calves to consume their total daily intake in the ACF, calves averaged 4-6 meals per day. If the calf did not consume all of the milk during a meal, milk was retained for the next calf. If milk fell below feeding temperature, milk was discarded before next calf could consume it. Feeding programs varied depending on the system and if heifers or bulls were fed. Calves were fed between 140-150 grams of powder per liter and fed up to 10 liters per day. The last two weeks prior to weaning, liters fed was gradually backed down until they no longer received milk. Eighty-five percent were feeding milk replacer. Fifty-six percent were feeding protein content in the milk replacer between 20-22% and 38% were feeding protein content in the milk replacer between 25-28%.

Calf starter was offered free-choice to calves starting at Day 0-2 (39%) and Day 3-10 (44%). Calf starter was replaced as needed daily to weekly to keep it fresh. Seventy-three percent of producers had calves consuming between 3-5 pounds of calf starter at weaning age, while 13% reported calves eating greater than 5 pounds of calf starter at weaning age. Forty-four percent used a calf starter protein of 16-20% and 56% of producers fed 21-22% calf starter protein.

Water was offered free-choice to calves, starting at day 0-2 (59%), day 3-10 (35%), and day 11-14 (6%).

Labor Management
Twenty-five percent of herd owners took care of calves, while 31% hired a calf manager, 19% herdsperson, and 25% family members. If they were not the primary calf manager, other duties on the farm included general farm labor or overall management of farm. On average, time spent feeding calves was 2.2 hours per day. This time included feeding, monitoring, vaccinating, dehorning, bedding and sanitation. Time spent feeding, managing, and caring for calves transitioning to the ACF averaged 1 hour. Producers commented no labor time was saved; time was more flexible and the labor was replaced with management time. Others reported an average reduced labor by 1.5 hours per day.
which allowed time to be more flexible and focus on other management factors. Utilizing the software is a key element to the ACF, but did not take much time to review the data. Producers’ usage of the software averaged .44 hours.

**Health Management**

Twenty-two percent fed colostrum and moved into group housing at birth. Thirty-three percent fed calves for 2-5 days prior to group housing. Forty-four percent of calves started on the ACF between 1-2 weeks of age. Sixty-nine percent used age for determining when to move calves to automatic calf feeder, while 31% used health of calf and 46% used consumption as an indicator to move to group housing.

Sixty-four percent of farms used bodyweights as the main measurement to evaluate calf performance. Mortality and morbidity rates are often used along with management records. Average mortality rate was 3%. Treatment for scours was 14% and respiratory treatment rate was 14%. Scour and respiratory treatment protocol included a combination electrolyte therapy with an antibiotic treatment and fever reducer.

<table>
<thead>
<tr>
<th>Annual Value to Quality of Life</th>
<th>Average</th>
<th>Range</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6,800</td>
<td>$100-$15,000</td>
<td></td>
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<table>
<thead>
<tr>
<th>Annual Value of ACF software</th>
<th>$51,300</th>
<th>$1,000-$2,000</th>
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<table>
<thead>
<tr>
<th>Months since ACF installed</th>
<th>31.6</th>
<th>11 to 60 mos.</th>
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</table>

<table>
<thead>
<tr>
<th>Herd &amp; Financial Assumptions</th>
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<tbody>
<tr>
<td>Herd Size</td>
</tr>
<tr>
<td>367</td>
</tr>
<tr>
<td>170-880</td>
</tr>
<tr>
<td>Number of heifers fed yearly</td>
</tr>
<tr>
<td>146</td>
</tr>
<tr>
<td>0-375</td>
</tr>
<tr>
<td>Number of bulls fed yearly</td>
</tr>
<tr>
<td>179</td>
</tr>
<tr>
<td>0-1,250</td>
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<tr>
<td>Cost per ACF</td>
</tr>
<tr>
<td>$517,302</td>
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<tr>
<td>$1,800-$28,000 Used avg ($5500)</td>
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<tr>
<td>Cost of ACF facilities</td>
</tr>
<tr>
<td>$66,643</td>
</tr>
<tr>
<td>$1,000-$240,000</td>
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<tr>
<td>Monthly costs associated with ACF</td>
</tr>
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<td>$55</td>
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<tr>
<td>$30-$100</td>
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<thead>
<tr>
<th>Labor Management</th>
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<tbody>
<tr>
<td>Labor for calves transitioning to ACF</td>
</tr>
<tr>
<td>1 hr.</td>
</tr>
<tr>
<td>0-2 hrs.</td>
</tr>
<tr>
<td>Labor for calves in ACF</td>
</tr>
<tr>
<td>2.2 hrs.</td>
</tr>
<tr>
<td>0.5-8 hrs.</td>
</tr>
<tr>
<td>Reduced hours of labor</td>
</tr>
<tr>
<td>1.5 hrs.</td>
</tr>
<tr>
<td>0-4 hrs.</td>
</tr>
<tr>
<td>Increased hours for records Mgt.</td>
</tr>
<tr>
<td>0.44 hr.</td>
</tr>
<tr>
<td>0-1 hr.</td>
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<table>
<thead>
<tr>
<th>Calf Health &amp; Management</th>
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</thead>
<tbody>
<tr>
<td>Square feet per calf</td>
</tr>
<tr>
<td>34 sq. ft.</td>
</tr>
<tr>
<td>13-63 sq. ft.</td>
</tr>
<tr>
<td>Calves per nipple station</td>
</tr>
<tr>
<td>31</td>
</tr>
<tr>
<td>15-27</td>
</tr>
<tr>
<td>Mortality</td>
</tr>
<tr>
<td>3%</td>
</tr>
<tr>
<td>1%-10%</td>
</tr>
<tr>
<td>Morbidity (Scours)</td>
</tr>
<tr>
<td>14%</td>
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<tr>
<td>0-80%</td>
</tr>
<tr>
<td>Morbidity (Respiratory)</td>
</tr>
<tr>
<td>14%</td>
</tr>
<tr>
<td>0-50%</td>
</tr>
<tr>
<td>Average Daily Gain</td>
</tr>
<tr>
<td>2.3 lbs./day</td>
</tr>
<tr>
<td>1.25-3.5 lbs./day</td>
</tr>
<tr>
<td>Weaning Age-heifers</td>
</tr>
<tr>
<td>56 days</td>
</tr>
<tr>
<td>45-77 days</td>
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<tr>
<td>Weaning Age-bulls</td>
</tr>
<tr>
<td>49 days</td>
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<tr>
<td>49 days</td>
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<table>
<thead>
<tr>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Range</td>
</tr>
<tr>
<td>Notes</td>
</tr>
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</table>

Indicators used on the software to determine calf health included drinking speed and daily consumption of milk. Ninety-four percent responded that the feeder showed alarms for calves not consuming total allotment, while 6% were not alerted. Thirty-seven percent have monitored average daily gain and averaged 2.3 pounds per day from birth to weaning. Average weaning age for heifers was 8 weeks and bull calves were 7 weeks old.

If calves were vaccinated at birth, vaccines included Rota Corona, Clostridium C&D, E.Coli, Inforce 3, Bovine Ecolizer C. Within a few weeks of age, vaccines included Johnes, Scour Boss 4, Inforce 3. At the time of weaning, vaccines included Presponse, Bovishield, and Johnes. For dehorning, 50% used the paste within a week of age; the remainder dehorned in group pen with a burner prior to weaning or a few weeks after weaning.

**Challenges with Automatic Calf Feeder**

Main challenges encountered with the ACF included learning the software and ID system, developing a feeding plan to control behavioral issues, and mechanical issues such as an occasional plug or sensor not working, replacing a small pump yearly, keeping system clean, and compatibility issues with pasteurizer system. Respiratory and facility ventilation were main challenges of moving calves to a group housing system.

**Reasons for installing Automatic Calf Feeder system**

The top reasons producers installed ACF in rank order:

1. **Labor efficiency**
   Focus labor more on management of calves rather than physical labor and flexibility of feeding schedule

2. **Calf health**
   Consistent, multiple feedings, temperature of milk always the same, increase space per calf, calf comfort

3. **New facility**
   Going to build anyways, needed more room, installed AMS for cows, and needed new project to challenge employees

**Management factors needed for success of Automatic Calf Feeder system**

The top management factors producers say key to success:

1. **Cleanliness**
   Detail oriented employees closely monitoring and cleaning of the lines, nipples, circuit, and cleanliness of calves

2. **Ventilation**
   Facility is designed with air quality being a key component of the system

3. **Management/Software**
   Software is invaluable, pays for itself, and worth the cost to catch sick calves earlier; watching calves is still important

**Summary**

Producer surveys showed success in switching from previous calf feeding systems to ACF systems. Although labor was not always reduced, physical labor was exchanged for management labor. Learning curves for software technology and facility management were noted, however feeding and housing efficiencies were gained. In sum, automatic calf feeders added value to quality of life and labor efficiency over previous system.

**Automatic Calf Feeding Systems Survey**

by ISU Extension and Outreach Dairy Team; Jennifer Bentley, Kevin Lager, Larry Treliv, Dairy Field Specialists in NE/SE/NW IA, Ron Lenth, Bremer County Director, Leo Timms and Lee Kiple, State Dairy Specialists, and Megan Kregel, Northeast Iowa Dairy Foundation.

Funding for this project was provided by the North Central Risk Management Education Center and the USDA National Institute of Food and Agriculture.
**Pasturization Feeding Systems-Producer Surveys**

**Introduction**  
Iowa State University Extension & Outreach conducted a survey in 2013 of producers who utilized a pasteurizer on their farm. Twenty producers responded to the survey. The average installation was 4 years old. The herds averaged 307 cows. The average cost to purchase a pasteurizer was $8,329. Additional costs included electrical costs, construction of new or adaptation of existing structures such as a utility room or milk house to accommodate the pasteurizer. An average additional cost associated with the pasteurizer was $3,370.

**Facility Management**  
Fifty-eight percent of farms housed calves in calf huts outside, and 42% housed calves inside a calf barn. Pens and barns were cleaned and disinfected between calves. Farms provided an average of 29 square feet per calf. Ventilation to minimize accumulation of moisture while not causing a draft on the calves is essential and can drive the success or failure of a calf management program. New and existing structures utilized a combination of curtain sidewalls and fans for summer ventilation and positive pressure tubes for winter ventilation.

**Pasteurizer Management**  
Pasteurizer temps and times varied with the system utilized. Times and temperatures ranged from 140-161°F for 30-60 minutes. Thirty percent of farms pasteurized colostrum and temperatures ranged from 130-146°F degrees for 30-60 minutes.

Milk was collected with fresh cow buckets, piped directly to pasteurizer or collection pails, and transported to pasteurizer or Milch Taxi. Forty-five percent pasteurized milk immediately after collection, 25% chilled the milk until it could be pasteurized and 30% left the milk at room temperature prior to pasteurization. After pasteurization, 40% cooled milk to feeding temperature and fed within ½ hour of being pasteurized.

Cleaning was done between collection times and manually cleaned with bleach, soap, chlorine sanitizer, or pipeline acid cleaner one to two times a day. Sixteen percent had an automatic cleaning system that washed once per day.

**colostrum Management**  
Fifty-five percent of farms administered colostrum within 2 hours after birth when the calf was born between 5 am and 5 pm. When calves were born between 11 pm – 5 am, 15% percent of calves received colostrum within 2 hours after birth, 40% fed 2-6 hours after birth and 45% fed 6-12 hours after birth. Fifty-five percent of farms administered 1 gallon of colostrum at their first feeding. Fifty percent of farms used fresh colostrum, 47% occasionally fed frozen colostrum.

Fifty percent occasionally used a commercial replacer. Fifteen percent of farms utilized pasteurized colostrum. Twenty-five percent evaluated colostrum prior to feeding either visually or use of a colostrometer or refractometer. Ten percent periodically measured the success of passive transfer of immunity with a refractometer or serum test.

**Feeding Management**  
Prior to the pasteurizer, farms fed milk replacer or non-pasteurized waste milk two times per day. With the pasteurizer, farms fed two times per day with bottles or buckets and 5% utilized an automatic calf feeder (see ACF producer survey, 26% utilized pasteurizer). Twelve percent fed 3 qts, 53% percent fed 4 qts, 29% fed 6 qts, and 6% fed 8 qts. per day of pasteurized wastemilk; consisting of fresh cow, high somatic cell, or treated cow milk. Only 5% of farms tested their milk for solids content and 25% for bacteria levels in the milk. If pasteurized milk was in short supply a balancer was used or older calves were fed milk replacer. Saleable milk was also used and high somatic cell count cows were pulled out and used as waste milk.

Calf starter was offered free-choice to calves starting at Day 0-2 (35%), day 3-10 (55%), and days 14-21 (10%). Calf starter was replaced as needed to keep it fresh.

Fifteen percent had calves consuming between 1-3 lbs. of calf starter at weaning age. Fifty-five percent of producers had calves consuming between 3-5 pounds of calf starter and 30% reported calves eating greater than 5 pounds of calf starter at weaning age.

Sixty-one percent used an 18% protein calf starter, 17% used a calf starter protein between 20-22% and 17% fed a calf starter protein greater than 22%.

Water was offered free-choice to calves, starting at day 0-3 (55%), day 3-10 (20%), day 14-21 (20%), and greater than 21 days (5%).

**Labor Management**  
Thirty percent of herd owners managed the calves, 25% were taken care of by a spouse, 15% herds-person, 10% calf manager, 15% part-time, and 5% by other family members. If they were not the primary calf manager, other duties on the farm included milking and general farm labor to overall management of farm.

On average, time spent feeding calves was 2.8 hours per day. This time included feeding, monitoring, vaccinating, dehorning, bedding and sanitation. Time spent feeding, managing, and caring for calves transitioning to pasteurized milk was 1.1 hour.

**Health Management**  
Calves transitioned onto pasteurized waste milk within 2 days of age. Thirty-five percent of farms used bodyweights as the main measurement to evaluate calf performance. Mortality and morbidity rates are often used along with management records.

Average mortality rate was 2%. Treatment for scour was 9% and respiratory treatment rate was 6%. Scour and respiratory treatment protocol included a combination...
electrolyte therapy with an antibiotic treatment and fever reducer.

Forty-two percent have monitored average daily gain. Average daily gain was 1.8 pounds per day from birth to weaning, with an average weaning age of 53 days.

Challenges with Pasteurizer System
Main challenges encountered with the pasteurizer system included making sure pasteurizer was turned on, milk quality going into the machine, motor bearings and repairs, consistent feeding with varying waste milk volume, cooling issues due to faulty water hose, and temperature issues caused milk to curdle.

Reasons for utilizing a pasteurizer system
The top reasons producers installed a pasteurizer in rank order:

4. Economic savings
   Savings on milk replacer

5. Calf Health/Disease Control
   Reduce disease transfer such as Johnes, overall herd health, less morbidity and mortality

6. Utilization of waste milk
   Have the milk and currently throwing it away

Management factors needed for success of pasteurizer feeding system
The top management factors producers say key to success:

4. Cleanliness
   Closely monitoring and cleaning of pasteurizer and collection equipment

5. Management
   Attention to detail, Colostrum management, proper operation, consistent

6. Temperature
   Monitoring of time and temperature, consistent feeding temperature to calf

Summary
Producer surveys showed success in switching from previous calf feeding systems to a pasteurized milk feeding system. Economic savings were noted, while achieving improved calf health and growth. Management factors utilized for the pasteurizer are important to the success of the overall calf management program.

Pasteurizer Feeding Systems Survey by ISU Extension and Outreach Dairy Team; Jennifer Bentley, Kevin Lager, Larry Tranel, Dairy Field Specialists in NE/SE/NW IA, Ron Lenth, Bremer County Director, Leo Timms and Lee Kilmer, State Dairy Specialists, and Megan Kregel, Northeast Iowa Dairy Foundation.

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>Range</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Years since pasteurizer implemented</td>
<td>4 yrs.</td>
<td>0.5-13 yrs.</td>
<td></td>
</tr>
<tr>
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<tr>
<td>Herd &amp; Financial Assumptions</td>
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</tr>
<tr>
<td>Herd Size</td>
<td>307</td>
<td>90-780</td>
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<tr>
<td>Cost of Pasteurizer system</td>
<td>$8,329</td>
<td>$5,500-$15,000</td>
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<tr>
<td>Costs associated with pasteurizer</td>
<td>$3,370</td>
<td>$150-$15,000</td>
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<tr>
<td>Monthly costs associated with system</td>
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<td>$10-$100</td>
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<tr>
<td>Feeding Management</td>
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<td></td>
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<tr>
<td>Temperature pasteurized</td>
<td>140 F</td>
<td>130-146 F</td>
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<tr>
<td>Time pasteurized</td>
<td>45 min.</td>
<td>30-60 min.</td>
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<tr>
<td>Temperature for colostrum pasteurized</td>
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<td>130-146 F</td>
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<tr>
<td>Time for colostrum pasteurized</td>
<td>46 min.</td>
<td>30-60 min.</td>
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<tr>
<td>How soon is milk fed after cooling</td>
<td>45 min.</td>
<td>0-60 min.</td>
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<tr>
<td>Labor Management</td>
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</tr>
<tr>
<td>Hours per day feeding calves</td>
<td>2.8 hrs</td>
<td>0.5-12 hrs.</td>
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<tr>
<td>Hours per day other than feeding labor</td>
<td>1.1</td>
<td>25-4 hrs</td>
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<tr>
<td>Calf Health &amp; Management</td>
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<td></td>
</tr>
<tr>
<td>Square feet per calf</td>
<td>25 sq. ft</td>
<td>10-42 sq. ft</td>
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<tr>
<td>Mortality</td>
<td>2%</td>
<td>1%-5%</td>
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<tr>
<td>Morbidity (Scours)</td>
<td>9%</td>
<td>1-20%</td>
<td></td>
</tr>
<tr>
<td>Morbidity (Respiratory)</td>
<td>6%</td>
<td>0-20%</td>
<td></td>
</tr>
<tr>
<td>Average Daily Gain</td>
<td>1.8</td>
<td>1-3.2</td>
<td></td>
</tr>
<tr>
<td>Weaning Age (days)</td>
<td>53</td>
<td>35-84</td>
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Funding for this project was provided by the North Central Risk Management Education Center and the USDA National Institute of Food and Agriculture.

1st Crop Harvest Tip by Larry Tranel

A reminder that a simply way to remember when to harvest first crop alfalfa using the PEAQ stage of growth is that when alfalfa is in a bud stage and 27” tall, it has a RFV of 170 standing in the field meaning it will end up at approximately 150 RFV in storage for dairy quality alfalfa. So, measure the longest stem in a 2’x2’ area and when it reaches 27” tall, then get it harvested as soon as weather permits.

Also, for quicker and more even dry down, remember to wide swath the hay. Research shows the wider swath helps improve the quality of the harvested hay.

Safe Harvesting!
Dairy Field Specialists
Jen Bentley, 563-382-2949 jbentley@iastate.edu
Larry Tranel, 563-583-6496 tranel@iastate.edu
Kevin Lager, 712-737-4230 klager@iastate.edu

State Dairy Specialists:
Dr. Lee Kilmer lhkilmer@iastate.edu
Dr. Leo Timms ltimms@iastate.edu
Dr. Jan Shearer jks@iastate.edu

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

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Pasteurization Feeding Systems-Producer Surveys

Enjoy 1st Crop Harvest of Hay