

# 2016 Transition Cow Management-Producer Survey

## Executive Summary

### Background

As a component of its educational program, the Iowa State University Extension and Outreach Dairy Team conducted a risk management survey in 2015 of producers managing a transition cow program, defined as 60 days pre-calving to 30 days post-calving.

While transition cow management encompasses only 20-30 percent of the herd, it can ultimately influence the milk production and health of 100 percent of the cows. Dairy producers need facts and tools when asking their lender for money to build or remodel barns without adding milk cows.

### Challenges and Successes

Challenges within the transition cow program for these producers can be categorized in four groups:

- Nutrition
- Metabolic/disease
- Employee management
- Facilities

Forty-two percent of producers would characterize their transition cow management as excellent, with successes for the transition cow program similar to the challenges.

### Survey Results

Twenty five producers responded to the survey managing predominately a conventional system. Herds averaged 395 milking cows and 60 dry cows, with Holstein as the predominate breed, with a rolling herd average ranging from 20,000 to greater than 28,000 pounds of milk. Milking systems are a key component to any dairy operation with an industry goal to achieve 60-80 cows milked per person per hour.

### Dry-off Management

Cows were dried off 45-60 days pre-calving and fed a far-off dry cow ration. The most common management practices at dry off included: intermammary antibiotic therapy and teat sealant, vaccination for scours, respiratory, mastitis, supplemental vitamins, and movement to a dry cow pen.

### Pre-fresh Management and Day of Calving

A pre-fresh timeframe is important to define to allow for ration changes, adjustment to new herd mates, allow for unexpected calvings, and appropriate vaccination timing for antibody production. Seventy-two percent fed the pre-fresh group a separate ration. The majority of producers made the final pen move three weeks prior to calving and moved cows into the calving pen one of three ways.

### Post Fresh Management

Just over half the herds managed the post-fresh cows in their own group for a period of 14-30 days, with one-third of these feeding a separate ration. Common post-fresh management practices included administering a calcium bolus, giving a magnet to first calf heifers, and collecting colostrum 2-6 hours after calving.

### Reproduction

The voluntary waiting period ranged from 40-80 days with one or more types of heat detection tools used to determine when to breed cows. These tools included using one or more synchronization programs individually or in combination with activity monitoring systems, tail chalk, kamars, and observation.

### Pen Moves

Fifty-two percent moved cows a total of 3-4 times from dry-off to 30 days post-fresh, followed by 36 percent with 1-2 pen moves. Thirty-three percent separated heifers from mature cows during the transition cow period.

### Nutrition and Feed Delivery

Frequency of feed delivery varied between groups of transition cows. The majority fed far-off, pre-fresh and day of calving cows one time a day, while 40 percent fed post fresh cows two times a day. Cows fed the far-off dry ration never had feed pushed up in 44 percent of the herds, while pre-fresh, day of calving and post-fresh had feed pushed up more than three times a day. Less than half of the producers met the benchmark of feed access of greater than 30 inches for pre-fresh and post-fresh cows.

### Facilities, Ventilation, and Heat Abatement

Producers utilized many types of facilities in the transition cow period. Far-off dry and pre-fresh cows were housed mainly in deep-bedded sand freestalls or a bedded pack system. Post-fresh cows utilized freestalls with deep-bedded sand or mattresses with bedding. Conditions for bedded pack barns were similar in that post-fresh cows again did not receive adequate space.

The majority of cows were housed in naturally ventilated barns, with a few housed in cross or tunnel ventilated barns. It is important to note that fans, sprinklers, and shade cloth are supplemental to the type of ventilation.

### Future plans

Survey respondents indicated their future plans include:

- Facilities: building a new transition cow barn, provide more space with addition of stalls or bedded pack area, dry cow pen fans, change from cross ventilation to tunnel ventilation
- Herd management: implement an activity system, install cameras in calving barn, hire full time employees for the transition cow barn
- Group of animals: separate first calf heifers from mature cows, have a post-fresh group, provide a close-up pen under a roof.

# Transition Cow Management-Producer Survey

## Introduction

The Iowa State University Extension and Outreach Dairy Team conducted a survey in 2015 of producers managing a transition cow program, defined as 60 days pre-calving to 30 days post-calving. Twenty five producers responded to the survey managing predominately a conventional system. Eight percent utilized a grazing system. The herds averaged 395 milking cows (90-3000) and 60 dry cows (10-450), with the predominate breed Holstein, followed by crossbreds Jersey and Ayrshire. Average rolling herd size ranged less than 20,000 lbs. of milk (8%), 20,000-24,000 (20%), 24,000-28,000 (48%), and greater than 28,000 pounds of milk (24%). Milking systems included: parallel (40%); herringbone (32%); para-bone (32%); or robot (4%). \*Some may be milking in more than one milking system.

Thirty-six percent milk three times per day, while the robotic systems averaged 3.5 visits for the herd. Twelve percent doubled the milking frequency 1-4 weeks after freshening, with the robotic system milking fresh cows five-plus times per day. Cows milked per person per hour varied: 30-40 cows (20%); 40-50 (32%); 50-60 (24%); 60-70 (8%); and greater than 70 (16%). Total daily time cows were away from feed and stalls for milking, management, or locked in headlocks varied with 48 percent away fewer than two hours per day and 44 percent being away 3-4 hours per day. The robotic facility had more than one housing system, thus having more than one timeframe for time away.

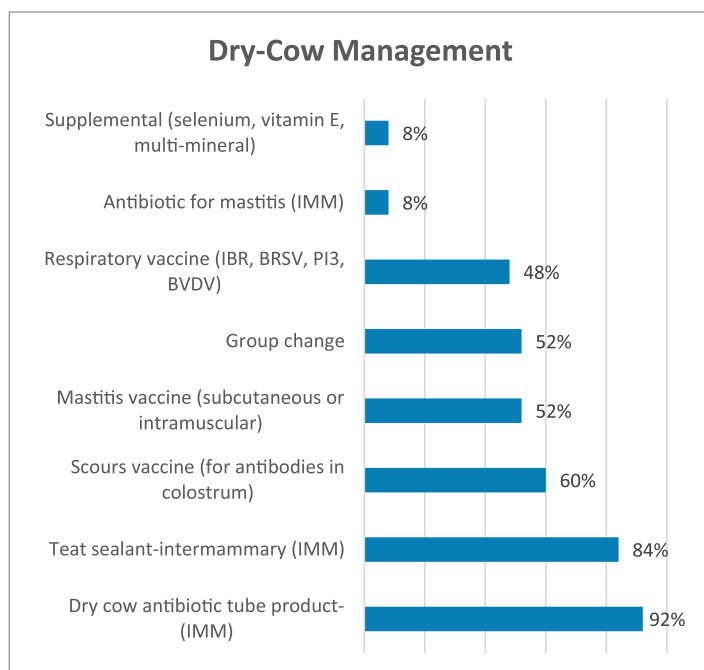
Producers utilized one or more record system with 72 percent using PCDART, 60 percent using DHIA; and 9 percent using DairyComp305. Eighty-four percent recorded fresh cow management incidents such as disease, treatment, and vaccination by writing it down on paper (52%), computer software (61%), or use of cellphone application. Seventy-six percent recorded calving difficulties.

## Dry-off Management

Dry-off practices were managed by the owner (72%), employee (20%) or a family member (8%). Cows were dried off on average 45-60 days pre-calving (79%) and fed a far-off dry cow ration (84%).

## Pre-fresh Management

The term pre-fresh was defined differently for producers. Thirteen percent defining pre-fresh as day of calving, 25



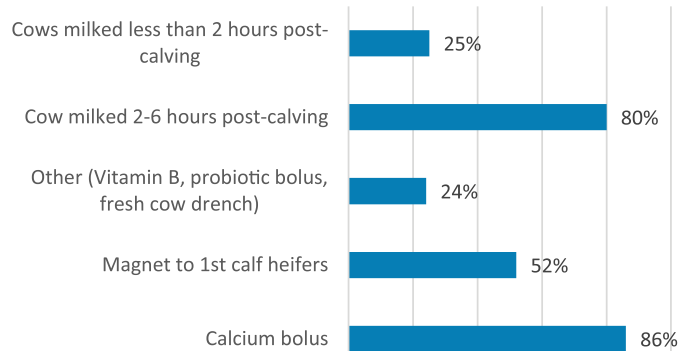
percent defining as 2-3 weeks pre-calving, and 62 percent defining as 3-4 weeks pre-calving. Seventy-two percent fed the pre-fresh group a separate ration. Management practices for pre-fresh cows were conducted by the owner (68%), herds person (20%), family member (8%), and employee (4%). These practices included all herds giving a booster vaccine (mastitis, scours), clipping of top-lines in the spring (32%), and udder singeing (11%). Half of the farms raised heifers off site and were brought back at varying ages pre-calving with the majority coming back 2-3 weeks prior.

## Day of Calving

The final pen move prior to calving occurred at the first signs of calving (32%), when calving was imminent (16%), or when cows were moved three weeks prior to calving (36%). Thirty-eight percent use a traditional and just-in-time calving strategy, with 25 percent using a socially stable strategy. Traditional calving was defined as cows that are moved from a dry cow group to a group maternity bedded pack within a few days of calving. Just-in-time calving was defined as cows moved from a pre-fresh pen to an individual or group calving pen at the point of calving. Socially stable calving was defined as managed pens kept together in the same group throughout the pre-fresh or entire dry period, typically in a series of bedded packs or a combination of free-stall pens and a bedded pack for the final stage.

Owners were the most likely to manage the day of calving, with 60 percent taking charge. A herds person or employee each managed the day in 24 percent of responses while many used multiple people to assist. The most common method of

### Day of Calving Management Practices



checking for calving was done by routine walk-throughs (88%) while 36 percent checked pens during milking times and 16 percent of responders had cameras in the calving pens. Time of calving assistance varied by producer one or more ways: always provided assistance at calving (4%), cow labored more than 2 hours (76%), assisted abnormal calving position (60%), minimal assistance or have Jerseys who tend to have a better calving ease than most breeds (12%), and no assistance (8%). When asked how much force was used during assistance, producers estimated correctly at less than 500 pounds when hand pulling. However, no one estimated correctly when using force with a calf jack, which is closer to 2000 pounds of force used to pull the calf.

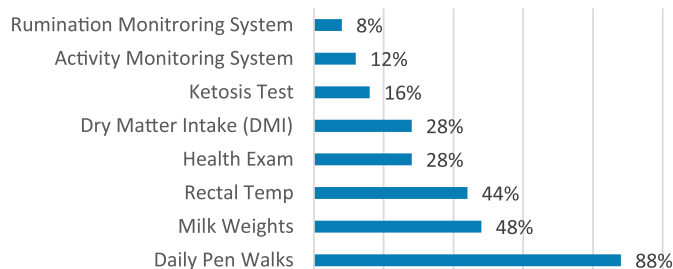
### Post Fresh Management

Post-fresh management was overseen by the owner (60%), herds person (32%), family member (4%), or employee (4%). Sixty percent managed the post-fresh cows in their own group for 14-30 days after calving, with 28 percent having a separate post-fresh ration.

Post fresh cows were restrained less than a half hour per day in 48 percent of responses while 16 percent restrained cows for 30 minutes to an hour each day. Thirty-six percent didn't use headlocks or restrained cows in a chute as needed.

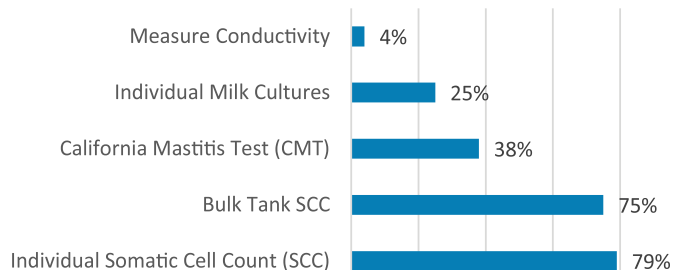
Up to 48 percent of producers have a written protocol for one or more treatment for milk fever, ketosis, metritis, retained placenta, displaced abomasum, off-feed, and

### Health Monitoring Tools



mastitis. However, only 12 percent have a written definition (written by the owner or veterinarian) for these diseases. Predominately the owner (60%) makes the decision to treat an animal, with 16 percent being treated by a veterinarian, and 24 percent treated by the herds person. Half of the herds administer a respiratory or mastitis vaccine 30-60 days post calving, while 32 percent are administered before 30 days and 9 percent after 60 days.

### Milk Quality Monitoring Tools



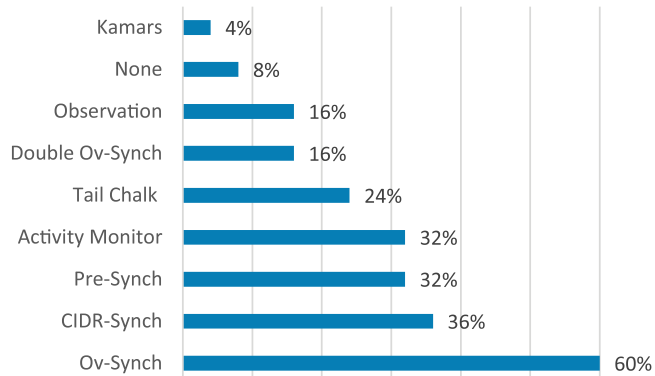
The voluntary waiting period ranged from 40-80 days with one or more types of heat detection tools used to determine when to breed cows.

Producers were asked to select the top two reasons why cows left the herd in the first 60 days and they included:

- Disease or fresh cow problems (48%)
- Injury and illness (36%)
- Mastitis and udder (36%)
- Death loss (32%)
- Low production (16%)
- Lameness (8%)
- Sold for dairy (4%)

Fifty-two percent moved cows a total of 3-4 times from dry-off to 30 days post-fresh, followed by 36 percent with 1-2 pen moves, and 8 percent more than four pen moves. Thirty-three percent separated heifers from mature cows during the transition cow period.

### Reproduction



Producers were asked about their hoof care management with 76 percent utilizing a footbath and routinely hoof-trimming during lactation for maintenance. Forty-four percent also routinely hoof-trimmed within 30 days of dry-off. Others routinely hoof-trimmed within 30 days after calving, while 4 percent had no routinely scheduled hoof trimming done, only as needed for lame cows.

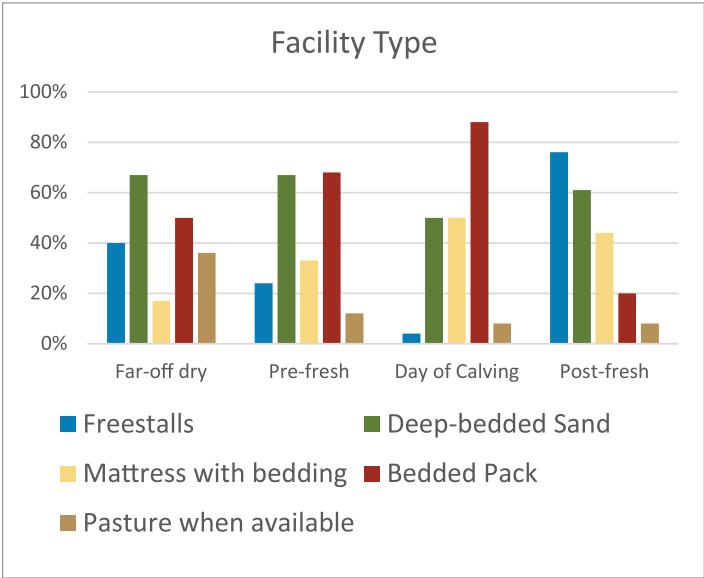
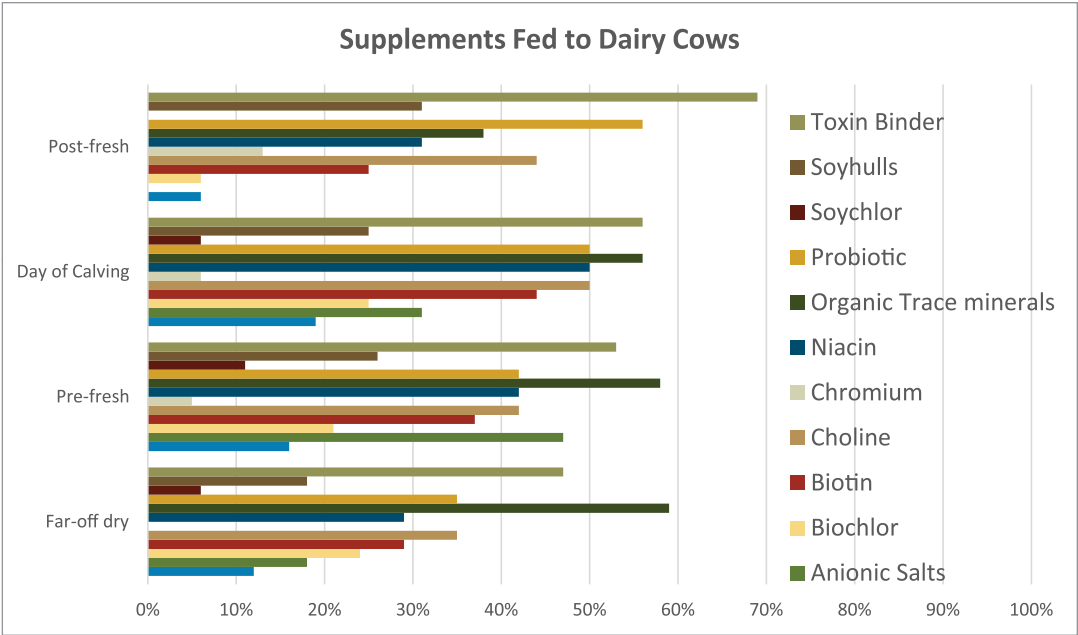
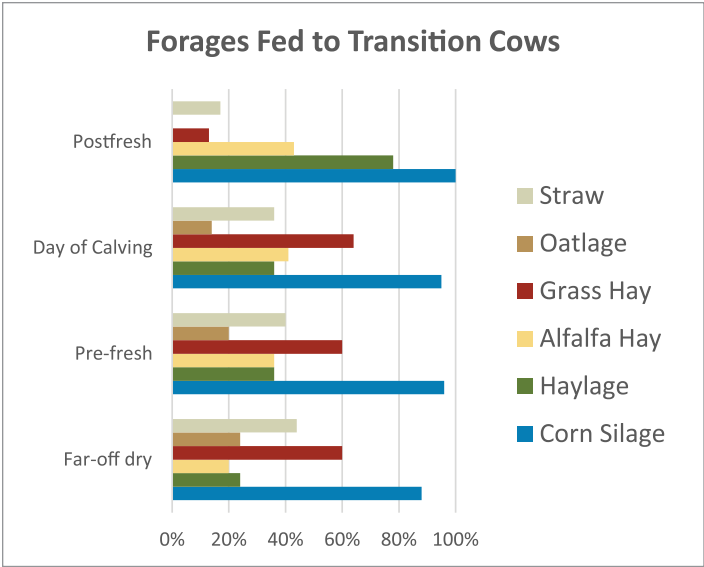
### Nutrition and Feed Delivery

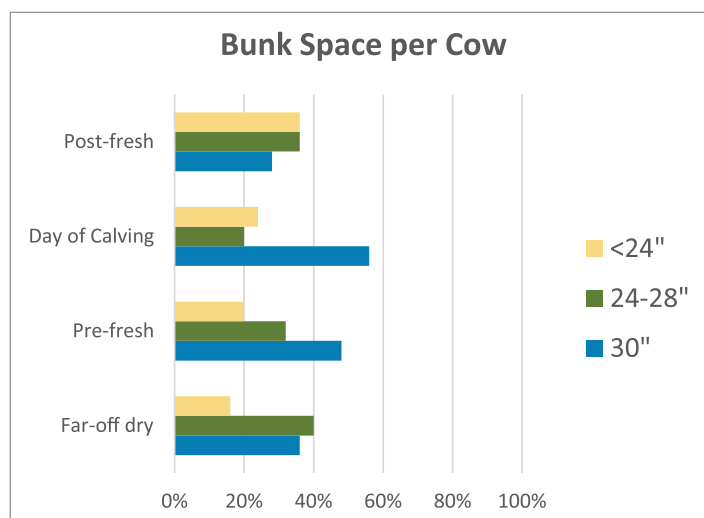
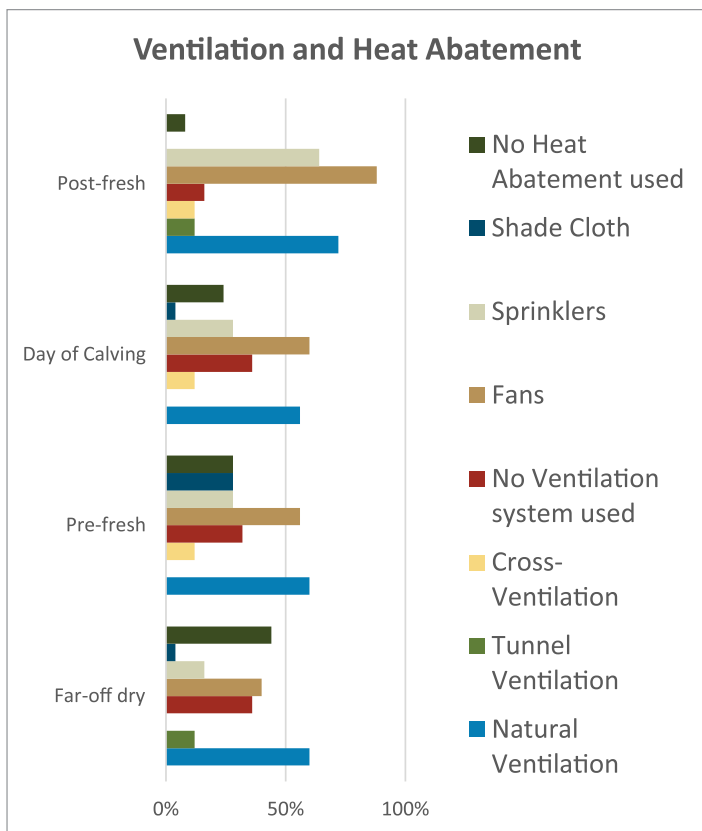
Frequency of feed delivery varied between groups of transition cows. The majority fed far-off, pre-fresh and day-of calving cows one time a day, while 40 percent fed post fresh cows two times a day. Cows fed the far-off dry ration never had feed pushed up in 44 percent of the herds, while pre-fresh, day of calving, and post-fresh had feed pushed up more than three times a day. An automatic feed pusher was used in one herd to push up feed multiple times a day.

There are many forages and supplements that can be added to the diet for each stage of the transition cow period. Above are the forages and below are the supplements producers surveyed. Many producers rely on their nutritionist to select products, hence the survey results are only what the producers knew about at the time of the survey.

If straw was used, an average of five pounds per cow was fed to the far-off dry cows, four pounds to the pre-fresh and day of calving, and less than two pounds per cow for the post-fresh group. Thirty to forty percent of the producers knew that Monensin and yeast was fed in some capacity with all stages of the transition cow diet.

The following charts describe facilities and types of ventilation systems used along with heat abatement strategies. It is important to note that fans, sprinklers, and shade cloth are supplemental to the type of ventilation. The facility graph includes predominate types of housing. Other types included using oat hulls for bedding, using tire shredded canvas with sand, and 5 percent of respondents utilized waterbeds in the post-fresh group. The chart below and to the right describe the amount of space provided to cows when a bedded pack or freestall system was used.

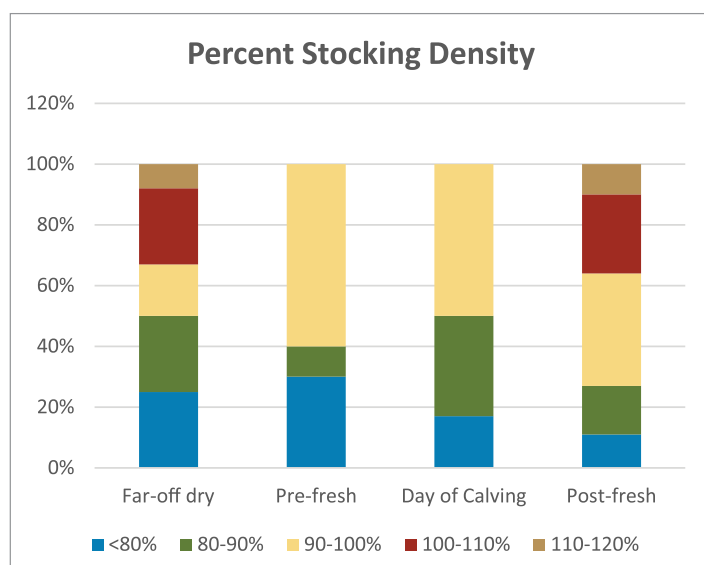




## Challenges

Challenges within the transition cow program for these producers can be categorized in four groups:

1. Nutrition: quality of feed, mixing correct amount of feed for size of group, finding low K hay
2. Metabolic/disease: body condition score, retained placentas, frequency of twins, displaced abomasums, mastitis
3. Employee management: obtaining 100 percent compliance of protocols, maintaining consistency in the transition program when the farm becomes busy in spring and fall

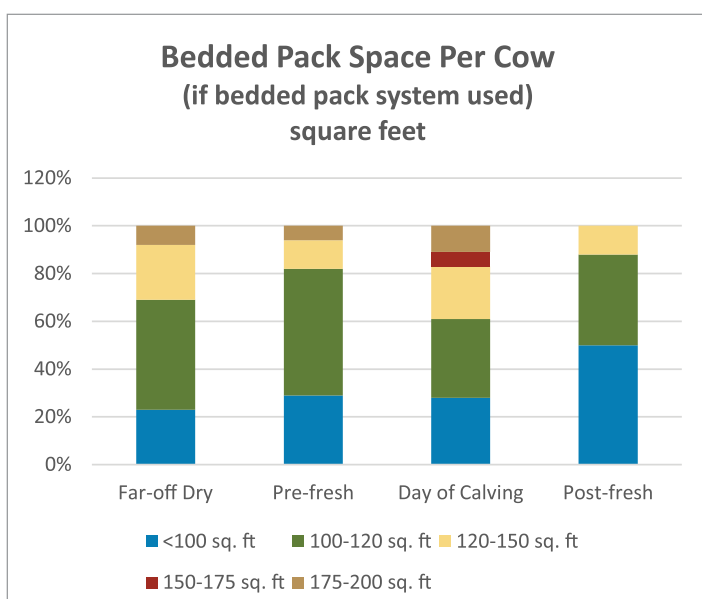


4. Facilities: overcrowding, providing adequate space for calving, getting cows into calving pen before calving, lack of post-fresh group

## Successes

Forty-two percent of producers would characterize their transition cow management as excellent, with successes for the transition cow program similar to the challenges. When they are working correctly, they can become major successes for the herd:

1. Nutrition: quality feed, low potassium hay diet, high forage milk cow ration, consistent feeding, free choice dry hay at freshening, good body condition score
2. Facilities: smaller group and closer to the parlor, reducing overcrowding, fresh/clean bedding, facilities that allow for cow comfort and observation of cows, less pen moves, flexibility of barn for group sizes
3. Herd health: calving ease, timely vaccinations, post-fresh monitoring, Bovikalc
4. Employee management: good care of fresh cows, excellent herds person



## Changes and Economic Impact

In the last five years, approximately 46 percent of producers have made impactful changes in the areas of far-off dry cows, pre-fresh, day of calving, or post-fresh. These changes include:

- conversion to sand freestalls
- built new or remodeled to house transition cows, allowing more room for cows
- increased the number of fans in the pre-fresh group
- implemented a calcium bolus to the fresh cow program
- installed headlocks for post-fresh group
- feeding Biochlor to post-fresh group

Costs to make these changes ranged depending on the type of change, with facility changes ranging from \$10,000-\$200,000.

Producers say making these changes has improved cow comfort and health while increasing milk production and labor efficiency.

They were asked to provide their opinion on the economic impact of how transition cows were managed on their operation with responses including: priceless, transition cows definitely make or break a dairy herd, 25-30 percent of their total lactation, \$200-\$1000 per cow difference.

## Technologies used

There are many ways producers manage cows besides the questions that were asked in the survey. They provided technologies they have implemented on their farms to manage the herd. They include: long day lighting, rBST, fans and sprinklers, probiotics and enzymes for feed efficiency, sand bedding, activity monitoring and heat detection systems, rumination systems, electronic RFID reader, automatic calf feeder, Pocket Dairy app for PCDart, and smart phone apps for weather, markets, and banking.

## Future plans

1. Facilities: building a new transition cow barn, providing more space per cow with the addition of stalls or bedded pack areas, fans in the dry cow pen, change from cross ventilation to tunnel ventilation
2. Herd management: implement an activity system, install cameras in calving barn, hire full time employees for the transition cow barn
3. Group of animals: separate first calf heifers from mature cows, have a post-fresh group, provide a close-up pen under a roof.

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## Acknowledgements

Transition Cow Management Survey conducted by ISU Extension and Outreach Dairy Team: Jennifer Bentley, Ryan Breuer, Larry Tranel, extension dairy specialists in northeast, southeast, and northwest Iowa; Ron Lenth, Bremer County extension director; Leo Timms, Morrill professor and dairy extension specialist;) and Hugo Ramirez, assistant professor and dairy extension specialist.

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