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June dairy month just passed and unfortunately, animal husbandry incidents that were not so positive garnered lots of media attention, too. We need to continue to spread the importance of dairy to the economy and to the health and well being of people.

We just experienced a difficult part of dairy history where survival mode tactics become a crucial part of our decisions. As extension dairy field specialists, we appreciated the opportunity to assist where we could in the many varied situations we were called upon.

**We surveyed 55 dairy producers we worked with and 36 producers responded with the following impacts and financial value of working with us:**

1) \$217 per cow profit increase	= \$112,840
2) \$45 per acre increase	= \$22,050
3) \$90,000 per farm increase	= \$360,000
4) Milk increase of 9 lbs/cow/day	= \$357,722
5) Milk increase of 684lbs/person/day	= \$75,000
6) Milk increase of 2,167 lbs/cow/yr	= \$101,415
7) SCC decrease of 145,862 per cow	= \$85,020
8) Feed decrease by \$0.70/cow/day	= \$53,144
9) Feed cost decrease by \$0.50/cwt	= \$14,000

**TOTAL ECONOMIC IMPACT = \$1,182,191**  
(annually on these 36 dairy farms)

100% of the respondents found ISU Extension valuable in assisting farm management decisions and having an impact on the profitability of their dairy farm. Again, we appreciate the opportunity to work with you.

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### Getting Cows Pregnant and Keeping Them Pregnant in Coordination with Practical Omega Nutrition

Integrating ruminant nutrition, reproductive physiology, immunology and clinical medicine has the potential to provide useful alternatives to improve postpartum health and fertility in dairy cows in a scenario of increasing milk production. University of Florida researchers W.W Thatcher, C.R. Staples and J.E.P Santos propose that sequential feeding of diets rich in linoleic acid (LN) followed by diets rich in eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) during the peri-parturient and breeding periods, respectively can benefit overall cow performance and fertility.

Such feeding strategies warrant economic analysis to evaluate cost-benefit. Coordination of management strategies to maximize both milk production and reproductive performance may optimize the economical return of dairy herds and allow for the industry to take complete advantage of the genetic potential to improve milk production through artificial insemination.

#### Take Home Messages from Thatcher:

- Fat supplements fed at a rate of at least 1.5% of the diet dry matter do appear to benefit reproduction but responses are variable.
- Feeding flaxseed may not improve initial pregnancy rates but appears to reduce embryonic loss.
- Feeding Ca Salts of Fish Oil reduced pregnancy losses at first service and increased pregnancy rates at 30 and 60 days to second service. Overall pregnancy losses were reduced by 6%.
- Polyunsaturated fats were most effective in increasing ovarian follicle size which contributes to earlier ovarian activity postpartum and embryo quality.

**Bottom Line:** Certain fatty acids alter expression of a complement of genes in uterus to support the development of the conceptus and maintenance of pregnancy. *Source: 2010 4-State Dairy Proceedings*

**ISU Extension Dairy Team**  
**“Bringing Profits to Life”**

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## **Dairy Feeding Economics I**

Times of high feed and low milk prices often call for survival mode economic decisions to be made for both the family and the farm. It is so very important to not make short term decisions that have a much larger long term cost. Below is a list of potential decisions and choices to consider:

### **Removing minerals does not immediately reduce milk yield, so let's get rid of them?**

Reducing or removing minerals and vitamins can save \$0.06 per heifer day and \$0.20 lactating cow per day. However, when mineral deficiencies occur six months later (reduce immunity, slower growth and declining fertility), it resulted in larger negative economic impacts which may be difficult to pinpoint and recover later in lactation or growth phases.

An increase of Somatic Cell Count (SCC) due to reduced immunity (removal of organic trace minerals, less Vitamin E and/or energy shortage) will lead to a loss of 2 to 2.5 pounds of milk per day or around \$0.30 per cow per day.

### **Reducing milk or feed to growing heifers doesn't affect current profits?**

Holstein heifers must gain over 1.7 pounds per day to calve at 23 to 24 months of age, weighing 1,250 lbs after calving. The cost of delayed calving is above \$2 per day for feed costs alone.

Dropping an accelerated calf feeding program can reduce milk yield in the first lactation by 1,100 pounds due to the impact on mammary gland development. This decision is a long term investment of \$30 or \$50 added feed costs not recovered for nearly two years in higher milk yield.

### **Cutting out feed additives can help us get through?**

Feed additives can return 3 to 10 times their cost in added milk production (for example a buffer returns \$0.30 in added milk for a \$0.06 investment. Feed additive importance should follow this ranking:

- 1) Monensin (an ionophore)
- 2) Yeast based products
- 3) Silage inoculants
- 4) Organic trace minerals
- 5) Rumen buffers
- 6) Biotin

These feed additives tend to be worth the cost.

## **Feeding Strategies That Worked**

- Forage quality is a key solution. Consider increasing corn silage in rations as feed costs per cow per day may drop \$0.15 to \$0.30. Evaluate use of low-lignin forages and forages high in NDF digestibility.
- Use computer modeling programs to allow fine-tuning of rations. Lower levels of protein based amino acid balancing and rumen microbial estimation can reduce feed costs while optimizing production.
- Determine if starch levels and utilization are optimal. Lower starch levels (20-22%) can maintain milk production with high quality forage, rumen fermentable fiber, adding sugar, and/or feeding and ionophore. Plant or kernel processing of corn silage can increase starch availability in the rumen and reduce fecal losses of starch.
- By-product feeds can be an economical sources, Distillers grain and wet brewers grain can reduce protein costs while corn gluten feed, soy hulls and wheat midds can maintain energy levels while reduce feed costs.

## **Monitoring Feed Changes**

**Let the cows do the talking!** MUN target of 8 to 14 mg/dl; Milk protein and fat above breed averages; Management level milk or 150 day milk should increase or maintain herd values; fecal scores range from 2.5 to 3.5.

**Herd feed efficiency** from 1.5 to 1.7 lbs. of 3.5% milk per pound of dry matter with each change in 0.1 point worth \$0.25 - \$0.35 per cow per day.

**Feed cost per pound of dry matter** at \$0.09 to \$0.10 per pound of dry matter reflects the cost of feed ingredients selected when building or balancing the ration. **Feed cost per cwt** (\$5-\$6 per cwt) reflects the cost per pound of dry matter offered. **Income over feed costs** represents margin (dollars available) for fixed, variable, labor and return to management.

*by Larry Tranel, Dairy Field Specialist NE/SE Iowa adapted from Mike Hutjens, 4-State Dairy Proceedings, 2010*

## **Options for Managing Dairy Cattle Mortalities**

*By Dr. Tom Glanville, Professor and Extension Agricultural and Biosystems Engineer, Iowa State University*

Changes imposed on the rendering industry have caused dairies in some areas to reconsider their strategies for managing dead stock. In a move to prevent the spread of Bovine Spongiform Encephalopathy (BSE) through animal feed, the Food and Drug (FDA) Administration implemented rule changes in April of 2009 that prohibit inclusion of the brains and spinal cords of cattle 30 months of age or older in animal feed.

As a result these tissues—which are considered to have the highest risk for carrying the agent thought to cause BSE—must be removed before the carcasses of older cattle can be rendered and used in animal feed. The removal process takes extra time and effort—leading to higher processing costs, record keeping, and the risk of regulatory fines should an older animal be accidentally rendered before the high risk tissues are removed. In some instances rendering plants have raised fees to cover these costs, in other situations some plants have decided to no longer process older cattle. Either way, dairying operations have felt the impacts of the rule change more than beef producers since milking herds contain a higher proportion of older cattle.

For some dairies the FDA rule changes have led to greater reliance on alternatives to rendering. Hauling older dead stock to the local landfill, for example, is an option for some. But 30 % of landfill operators surveyed by the Iowa DNR said they do not accept dead stock, and another 26 percent will only accept carcasses under pre-arranged conditions. Weather permitting, and with proper excavation equipment, on-farm burial is an option for occasional losses. Roughly 2% of the carcass weight consists of nitrogen, however, and as carcasses decompose this can lead to ammonia and nitrate contamination of soil and shallow groundwater making careful site selection essential to avoid pollution of nearby wells or streams. Iowa DNR burial rules and a statewide on-line burial zone map provide additional guidance on site selection.

If incineration is used, Iowa air pollution regulations require that carcasses be burned in engineered incinerators equipped with afterburners, or in other approved incineration devices that meet smoke emission limits. Since carcasses are roughly 65%

water, it takes considerable fuel and time to combust large species. Performance data cited by one Midwest manufacturer of equipment sized to handle a mature cattle carcass, indicate one hour of burn time for each 70-100 lbs of carcass weight, and average fuel consumption of 2-2.5 gallons per hour.

Following the lead of poultry and swine farmers who began using composting for disposal of smaller species in the 1990's, many beef and dairy producers are now composting their mortalities as well. Composting is a temperature sensitive operation, so for mature dairy animals beyond the 30 month rendering limit, decomposition of soft tissues in unturned piles can take from 4 months—if done during warm seasons—to 10 months or longer if the process is begun during cold weather. If recommended materials and construction methods are used, however, relatively little management is necessary during the decomposition process. Breakdown of soft tissues can be accelerated, if desired, by occasional turning of the compost.

For more details on these dairy mortality disposal options, see materials posted on the ISU Extension Dairy Team webpage at <http://www.extension.iastate.edu/dairyteam>

## **Locomotion Affects Her Production and Reproduction**

*by Ron Lenth, Bremer County Extension*

Cows are a lot like people...how our feet feel determines our productivity.....and we don't weigh over half a ton and spend a lot of time on concrete! Here's how you can, with some practice, learn to locomotion score and check for lameness in your herd. Score them on a 1-5 basis on this basis:

1. Level back standing and walking (Normal)
2. Level back standing and arched back walking (Normal)
3. Arched back standing and walking and slightly abnormal gait
4. Arched back standing and walking and partial weight on 1 or more limbs
5. Arched bank standing and walking and avoids bearing weight on 1 or more limbs

First, either you or your herd manager do some practice on your higher producing group (not the whole herd) with your trusted veterinarian and/or feed consultant. Then compare your scores with theirs as a learning method. Should both of your scores tend to follow each other, then consider this:

(Scores 3-5 are signs of lameness).....if over 10% of the high producing herd have a score of 3

or higher , further investigation into potential causes is advisable. These causes are commonly associated with too much time on concrete due to rough flooring, overcrowding, parlor throughput, plus foot diseases, and also acidosis. Data from the University of California-Davis, showed this milk production loss (a "3" @ 5%, a "4" @17%, and "5" @35%). How many of these are also slow to exhibit heat and rebreed. Another article from the 2001 AVMA Journal reported that cows with lameness took approximately 40 days longer to conceive.

You can learn a lot about how a cow feels and performs by watching her walk. How many good productive cull cows can you save by catching and dealing with her problem early???

## **An Opportunity In Disguise**

*J.K. Shearer DVM, MS*

*ISU Professor and Extension Veterinarian  
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A little over a month ago Mercy for Animals (MFA) released an undercover video displaying abuse of cows and calves at an Ohio dairy farm. The video, should anyone still want to view it can be found at [www.mercyforanimals.org/ohdairy/](http://www.mercyforanimals.org/ohdairy/) . If you should choose to see it, prepare yourself for some of the most horrible mistreatment of animals that you may ever see.

These kinds of things make us angry - angry with the people who commit such sadistic acts and angry with those around them for not recognizing that these people had the potential to do such things. We also get angry with groups like MFA whose sole agenda is to end animal agriculture. Media events such as these stir up so much anger and negative emotion that it's difficult to see that they also present opportunities. I share the following experience for what it may be worth.

Not long ago I spent some time working with a group of on-farm trimmers at a large dairy in Texas. The Manager of Farm Operations is a veterinarian and good friend of mine for many years. He has made welfare a top priority in his operations and it shows. Cows are well cared for, handled calmly and comfort is a high priority. All of the company's dairy units are certified through the Validus Dairy Welfare assessment and audit program.

I just happened to be at one of their operations when the MFA video was released. We were busy working on feet when about mid-morning, my friend came by

the trim chute to say "hi". After a moment of greeting, he explained that he had just viewed the video and found it very disturbing. He said, "I think this one is the worst yet". We talked for a bit and decided that we'd break from the trimming work, take the group to the office and show them MFA video. It was a multi-cultural group - only 1 of the managers and I were Americans and both of us oddly enough were Ohio-ans, both familiar with the Ohio dairy.

Just before presenting the video, my friend prepared the group for what they were about to witness. He explained that the video was filmed undercover and that several of the scenes were very difficult to watch. I too was seeing the video for the first time and although I was aware it was not good, I wasn't prepared for what I saw and neither was anyone else. As the video played the entire group sat stunned in silence, only shaking their head in utter dismay and wonder. When it was over, he opened a discussion so people could share their thoughts and concerns.

At lunch time and throughout the next couple of days there were frequent references to the video and I am sure far more during the off-hours. One just doesn't forget things like that over night. But, what I found so powerful in this situation was the company vice-president taking advantage of this situation to inform and reaffirm that the welfare of animals for their company was a top priority. As so many have said, it's really all about creating a culture of respect for animals and it starts at the top. Owners and managers, like parents, set the standards for how things should be done in their businesses as well as their homes. That's what leadership and parenting is all about.

Like many, I continue to struggle with some of the video images that are yet so vivid in my mind. Hearing and reading the multitude of comments expressed by email, from list-serves or in casual conversation was helpful to me. So many were able to put into words the anger and frustration that I had felt, but simply couldn't find the words to express. But, probably most important to me from this experience was recognition that if we're not careful, anger can limit us from seeing opportunity.

Difficult as it is, every operation should make time to get their employees or their family members together to talk about these issues. Take this opportunity to reinforce the message of how animals should be treated. Don't let the suffering of animals go in vain and don't let the actions of 1 or 2 deranged or misguided people suggest that animal abuse is acceptable. Instead, find in these situations the opportunities to make a positive difference in the welfare of animals.

## **Evaluating Your Transition Cow**

**Program** by Jenn Bentley, Dairy Field Specialist, NE Iowa

The transition period known as 21 days pre-calving and 21 days post-calving is a critical time in a cow's life and proper management in this area is crucial. "Cows experience many physiological and metabolic changes and must successfully adapt to the changing demands" says Mike Overton, University of Georgia, and College of Veterinary Medicine, who recently spoke at the 4-State Dairy Nutrition Conference.

Mike summarized some key components to help make the transition a success:

### **Pen Movement, Facilities, Cow Comfort**

The goal during pen movements is to reduce the social, environmental, and metabolic stressors; while working it into a manageable system for your farm. Making unnecessary pen moves will most likely cause a drop in DMI and elevated cortisol levels, both of which will negatively impact immune function and overall health and productivity.

Moving cows 6 or more times during the transition period puts cows at a higher risk for metabolic disorders. A goal of 4 or less moves will put cows at a low to moderate risk of problems. Due to the variance of calving, strive to have at least 90% of cows spend at least 10d in close-up pens. Ideally, you'd like to see cows in the close-up pen 14-21 days prior to calving. These moves will also change with summer heat stress or cows carrying twins; where the gestation length is 5-7 days shorter.

- If possible, separate heifers and older cows. Heifers have been shown to have longer resting times and higher DMI when separated from mature cows.
- While in close-up and fresh cow pens, cows should have access to 30-36 inches of bunk space to maximize feed intake.
- Space requirements:
  - ~100 sq ft/cow in bedded packs
  - ~500-600 sq ft/cow of loafing area
  - ~50-75 sq ft shade area/cow in open corrals; or 1 properly bedded and maintained freestall

- Acclimate heifers to lock-ups before entering the close-up pen
- Provide 2 locations of water/pen and a minimum of 3 linear inches/cow
- Provide soaker lines during heat stress that cycle .33 gal of water/cow/cycle:
  - Once every 15 min from 70-79° F
  - Once every 10 min from 80-88° F
  - Once every 5 min above 88° F

Overton says, monitoring transition cows will provide your farm with regular observations to determine; what is normal, observe an intentional change to management or performance, discover declines in management or performance, and determine possible causes of abnormal performance.

### **Monitoring Feed Intake**

- Uniform feed intake by all animals
  - 21-24 days precalving; at least 26 lbs DMI for mature Holstein and at least 23 lbs DMI for Holstein heifer when housed in separate pens
  - 2-21 days postcalving; at least 35 lbs of DMI for 1<sup>st</sup> lactation Holsteins and at least 43 lbs DMI for mature Holsteins, in a mixed parity DMI should be at least 38 lbs for Holsteins.
- Monitor urine pH if using DCAD diet for close-up cows
  - Once weekly, assess 10-15 cows
  - Goal: **all cows at a pH of 6.0-6.9**
    - An average can be misleading, especially if cows are sorting
- Monitor particle size with Penn State Shaker Box
- Monitor manure for fiber length, grain particles, gas bubbles and consistency across cows within pen

### **Monitor Body Condition Score**

- Monitor BCS at close-up, fresh, and again 2 months into lactation
- Normal weight loss during first 30 days in milk should be < 0.75 BCS or ~90 lb

First service conception rate can be reduced by 50% when cows lose a BCS of more than 1.0 during the first 60 days in milk. Cows may stop cycling when BCS reaches 2.75 or below.

### **Fresh Cow Monitoring**

- Incorporate a fresh cow program to evaluate appetite, attitude, and appearance
- 10 day monitoring program
- Develop a disease treatment protocol
- Record major fresh cow events; milk fever, DA, RP, mastitis, metritis, lameness
- Fresh cow goals:
  - Milk fever-less than 3-5%
  - DA-less than 3-5% of all calvings
  - RP-less than 8% of all calvings
  - Monitor total days dry and days in the close-up pen

### **Monitor Early Lactation Milk Production**

- Evaluate first test milk of cows 20-30 DIM
- Week 4 milk production
  - Using DairyComp305, 4 week milk production can be calculated by using item type 122 (weekly average milk on week “x” where “x” equals 4)
- Daily milk weights
  - Cows should increase in milk by ~10%/d for the first 14 days
  - Heifers should increase in milk flow by ~6-8%/d for the first 14 days
- Evaluate milk components
  - Calculate fat:protein ratio for cows at first test 10-40 DIM
    - If >40% have a fat:protein ratio greater than 1.4, transition program should be evaluated
  - Evaluate first test fat percentage
    - If >10% have excessively high first test fat percent (5.0 for Holstein, 6.0 for Jerseys) transition program should be evaluated

These guidelines by Mike Overton, are just a few of the management goals and decisions to be made on a transition cow program. Take a simple walk through your barn and observe cows in their environment. A combination of housing, cow comfort, nutrition, and general cow health and condition will allow for a successful transition period, along with managing and using your records to assist in evaluation.

### **New Antibiotic Regulations in Calf**

**Milk Replacer** by Jenn Bentley, Dairy Field Specialist, NE Iowa, adapted from Noah Litherland, Univ. of Minnesota

In April, U.S. Food and Drug Administration regulation changes have affected the most popular antibiotic option for calf milk replacer. The 1<sup>st</sup> change in the new antibiotic regulations is the ratio of neomycin sulfate (Neomycin) to oxytetracycline (Terramycin), also known as Neo-Terra (NT) on product labels. The previous ratio was 2 parts neomycin sulfate to 1 part oxytetracycline; the new ratio is 1:1. The lower dose concentration will be 8-16 g/ton of each antibiotic versus previously approved 100-200 g/ton neomycin and 200-400 g/ton oxytetracycline.

The 2<sup>nd</sup> change affects the dose and length of time that antibiotics can be fed. Feeding medicated milk replacer from birth to weaning will no longer be permitted. Medicated feeds containing NT 1:1 may be fed for 7-14 continuous days at a rate of .10 mg/lb of bodyweight. The updated regulations will be labeled and allow for NT to be used for improving feed efficiency or for treating diarrhea and pneumonia caused by bacteria.

This change brings up an important message about antibiotics. Antibiotics do not offer protection from *rotavirus*, *coronavirus*, *coccidia*, or *cryptosporidia*, which are the most prevalent causes of dairy calf scours. These viruses and parasites are not bacteria and therefore not susceptible to antibiotics. An example of a 100 pound calf eating 1 to 1.25 pounds of milk replacer powder each day, the treatment rate would be a concentration of 1600-2000 g of NT/ton of milk replacer. In comparison, the old rate was approved at 600-1200 g/ton. So, the higher rate should be effective, but will be cost prohibitive to feed the new higher rate to all calves on a regular basis.

The new regulations may require producers to maintain separate milk replacer inventories. An “add pack” approach may allow producers to continue feeding a standard non-medicated milk replacer and mix in NT 1:1 for calves that need treatment.

Antibiotics in milk replacers were clearly effective in improving performance and health of calves (Morrill et al., 1977; Quigley et al., 1997; Heinrichs et al., 2003; Berge et al., 2005). Situations with poor sanitation or where environmental stressors and poor nutrition place extra burdens on calves likely benefited the most from medicated milk replacer programs (Berge et al., 2005.) The new regulations will have the least impact on dairy producers that place a premium on sanitation, bio-security, bedding quality, and feed a quality nutrition program.

It is recommended to discuss with your veterinarian and nutritionist the most desirable management approach specific to your farm.

## 400,000 SCC Limit is on the WAY!!

by Dr. Leo Timms, ISU Extension Dairy Specialist

Although the U.S. Pasteurized Milk Ordinance public health standard for maximum SCC will not change (750,000 cells/ml), tighter SCC regulations are on the way. As of Oct. 1, many producers (based on processor requirements) will have to maintain a **three month rolling geometric mean SCC  $\leq$  400,000 cells/ml.**

While this is not a US standard, it will be required by the European Union (EU) which is a consumer of dairy products or products that contain dairy ingredients. The EU standard is 400,000 SCC and all dairy products or products that contain dairy ingredients that are exported to the EU must meet their SCC standard.

In the past, this rule was interpreted that the commingled milk (vat, tank, etc) at the plant that went into dairy products had to meet the 400,000 SCC limit. This standard has been in place for over a decade. The change is that **all individual farms providing milk into these exported product must meet the 400,000 SCC limit (not just the pooled farm samples).** Since many of our Midwest processors are processing and making products and ingredients for this export market, they have decided to adopt these 400,000 SCC limits.

It would be exceptionally hard and costly to separate and process milks of different SCC and most feel these change will result in both higher quality and quantities of milk, even better dairy products and lower input costs, and a great export market. Many of these processors in the past have supported proposals to NCIMS to lower US standards to 400,000 with limited success. The difference is this will now be industry driven rather than regulatory driven.

- **What does 3 month rolling geometric mean SCC  $\leq$  400,000 really mean?**

The 400,000 limit or value is the simple part or upper limit. The value used for each farm will be a rolling average over 3 months (add this month and drop off SCC from 3 months ago) and will be a geometric mean (slightly different than an arithmetic mean). By making it a rolling geometric mean, it dampens the effects of an occasional blip or spike in SCC, but will certainly not amend the problems of producers who consistently are above this level.

- **What does this mean to individual producers?**

1. **Producers who are consistently below this limit?**

You've already seen the benefits of low SCC and higher quality milk so keep up the great work! Directly it should have limited impact, but indirectly, every farm in your cooperative or processor must meet these limits so everyone needs to work together to achieve these goals.

2. **Producers who are mostly below the limit but have occasional SCC spikes?**

The geometric mean may dampen those SCC spikes but attention should be placed on defining when these occur and finding solutions to prevent problems.

3. **Producers who struggle to make these limits:**

Start now and work with your dairy professionals to analyze your herd ( how many high SCC cows, what germs and causes) and evaluate and improve areas for prevention. Also, more focused attention on proper therapy or culling will be critical.

### **What does it mean for our industry?**

Quality counts and pays! Continued improvement in our quality assures healthier cows and increased farm profitability, higher quality products, and happy consumers and customers. It's a winner for all.

Don't wait to get started if you need to make some changes and adjustments. The SCC regulations go into effect October 1 but the 3 month rolling mean will be determined ahead of that. It's never too late to maintain or improve milk quality and evaluate your practices and procedures no matter what your SCC.

Look for some meetings/ workshops in the near future and don't hesitate to call your dairy professionals and extension colleagues.

## **Fresh Cow Mastitis Screening Using**

**CMT** by Dr. Leo Timms, ISU Extension Dairy Specialist

Fresh cows and heifers present the highest risk animals for mastitis. Summertime, especially, amplifies these risks as hot, humid weather increases mastitis germ loads as well as decreases animal immunity due to heat stress, lower dry matter intake, and other stressors. There's no better time to focus /apply a mastitis screening procedure than at calving.

**SCREEN:** Having an active **fresh cow clinical mastitis and CMT monitoring system** in place (and appropriately interpreting it to make proper decisions) is the key to know if your transition mastitis control is working and separate that from problems that may occur after calving and result in later mastitis or a high SCC on first DHI test. **Using a CMT will make you \$\$\$\$\$\$!**

- ***It takes time and money and I thought all fresh cows and heifers have high SCC so why run a CMT?***

This is an old, false tale. In well managed herds, > 80-90% of animals and quarters can be CMT – (low SCC) on day of calving or certainly within 2-3 days. This is the best way to show yourself that you can freshen animals without mastitis and that your pre-fresh mastitis prevention strategies are working. Plus the test is simple and easy to run, takes < 1 min., and costs pennies. Great investment for fresh cows and heifers! **So run the CMT religiously!**

- ***What scale should I use (neg, trace, 1, 2, 3) as there are different degrees of gelled milk (SCC)?***

For fresh cows, the best results are to **classify as no gelling or gelling**. This gives the best accuracy and is much easier. You may want to mark really thick gelled samples (hardly move in the paddle) as they are more apt to be infected / show a future clinical problem.

- ***What does a negative CMT mean?*** **UNINFECTED and no mastitis (95+% accurate!).** Use this to monitor prevention. You should see lots of animals with negative CMT! This is your pat on the back! It shows you've prevented mastitis problems at calving!

- ***What does a positive CMT (CMT+ or gelled) tell you?***

It tells you the animal has a high SCC and has sent somatic cells to the udder to fight or ward off a conflict (infection)!

- ***Does a CMT + mean they are infected?***

Not necessarily at that moment. Most animals get germs on and in their teats prior to calving as teats shorten and swell, and sometimes leak. The animal uses her SCC to ward off that infection and stay healthy. **50-60% of the time the animal is CMT + after calving, they have already cured the infection (SCC drop in < 2 days)!**

- ***Does CMT pick up infected animals?***

Yes, on **calving day** 70-75% of infections will gel the CMT paddle. By **day 3 post calving**, CMT picks up 85%?

- ***When should I run the CMT?***

I recommend day of calving. It may be slightly less accurate than day 3 post calving (a few more false positives or cured cows with high CMT) but it allows seeing problems earlier. It also works on colostrum (stir with finger).

- ***What should I do when I see a CMT + animal?***

**First, use it to monitor prevention.** Especially if you see a group of high SCC animals, turn your attention to transition cows/ lots and evaluate prevention! Make sure to avoid problems in the next group.

**Second, mark the cow so everyone is aware this cow has a high SCC and can get special attention** (watch at feedbunk, milkout properly). Most times, TLC works!

**Finally, consider treatment if the cow is clinical or you know she is infected (culture early).** **Make sure it's a germ where treatment will be cost effective!** Again, many CMT + are cured so treatment cost w/ no return and a lot of risk (antibiotics).

**Midwest Dairy Cow Annual Budget- Freestall May 2010**  
**Large Breed Dairy Cow Including Replacements Producing**  
**20,000 lbs. & 24,000 lbs. of Grade A Milk**

		20,000 lbs.		24,000 lbs.	
		200 cwts.		240 cwts.	
		702 lbs.		842.4 lbs.	
		604 lbs.		724.8 lbs.	
		1152 lbs.		1382.4 lbs.	
		242,000 SCC		242,000 SCC	
		0.36 head		0.39 head	
		0.51 head		0.52 head	
		0.18 head		0.21 head	
<b>I. RECEIPTS</b>					
1. Components:					
a. Butterfat		1.7058 \$/lb.	\$1,197.47	1.7058 \$/lb.	\$1,436.97
b. Protein		2.1523 \$/lb.	\$1,299.99	2.1523 \$/lb.	\$1,559.99
c. Other Solids		0.1704 \$/lb.	\$196.30	0.1704 \$/lb.	\$235.56
d. Producer Price Differential		1.08 \$/cwt.	\$216.00	1.08 \$/cwt.	\$259.20
e. Quality		0.00071 \$/thousand	\$0.171820	0.00071 \$/thousand	\$0.171820
f. Protein Premium		0 \$/lb.	\$0.00	0 \$/lb.	\$0.00
g. Volume		0.185 \$/cwt.	\$37.00	0.185 \$/cwt.	\$44.40
2. Capital Payout		0 \$/cwt.	\$0.00	0 \$/cwt.	\$0.00
3. Cull/cow (a)		\$300.64 per hd.	\$108.23	\$300.64 per hd.	\$117.25
4. Dairy calf		\$150.00 per hd.	\$76.50	\$150.00 per hd.	\$78.00
5. Replacement heifer calf		\$450.00 per hd.	\$81.00	\$450.00 per hd.	\$94.50
6. MILC payment		\$0.0000 \$/cwt.	\$0.00	\$0.0000	\$0.00
<b>GROSS RECEIPTS</b>			<b>\$3,212.66</b>		<b>\$3,826.03</b>
<b>II. VARIABLE COSTS</b>					
<b>A. FEED COSTS (b)</b>					
1. Corn equivalents		\$3.39 per bu.	104.38 bu.	\$353.85	\$382.76
2. Corn Silage		\$33.90 per ton	8.04 tons	\$272.56	\$270.86
3. Hay equivalents		\$131.75 per ton	6.09 tons	\$802.36	\$794.45
4. Salts and minerals		\$0.14 per lb.	241.97 lbs.	\$33.88	\$45.25
5. Protein supplement		\$0.15 per lb.	1284.83 lbs.	\$186.30	\$268.99
6. Whole (linted) cottonseed		\$0.14 per lb.	724.5 lbs.	\$104.15	\$195.68
7. Fat		\$0.32 per lb.	26 lbs.	\$8.19	\$34.97
8. Milk replacer, calf starter			\$65.00		\$44.00
<b>9. Total Feed Costs</b>			<b>\$1,826.27</b>		<b>\$2,036.96</b>
<b>B. LIVESTOCK COSTS</b>					
1. Milk marketing per cwt.		\$0.30	200 cwts.	\$60.00	\$66.00
2. Veterinary and Health				\$130.00	\$140.00
3. Fuel, utilities and repairs				\$152.00	\$155.00
4. DHIA & accounting				\$28.00	\$30.00
5. Breeding fees				\$42.00	\$52.00
6. Bedding, supplies and misc.				\$160.00	\$170.00
7. Total Livestock Cost				\$572.00	\$613.00
8. Operating Capital Interest		9%	3 months	\$53.96	\$59.62
<b>9. Total Variable Costs</b>				<b>\$2,452.24</b>	<b>\$2,709.59</b>
<b>III. FIXED COSTS (c)</b>					
1. Machinery, equipment, facilities				\$310.00	\$340.00
2. Interest & Ins. on Herd		7.50% annually		\$105.00	\$115.50
3. Death Loss		5% \$1,400		\$70.00	\$77.00
<b>4. Total Fixed Cost</b>				<b>\$485.00</b>	<b>\$532.50</b>
<b>IV. TOTAL COST</b>					
(except for labor and management)		per cwt. (d)	per cow	per cwt. (d)	per cow
		<b>\$13.77</b>	<b>\$2,937.24</b>	<b>\$12.74</b>	<b>\$3,242.09</b>
<b>V. RETURNS</b>					
1. Gross receipts		per cwt. (d)	per cow	per cwt. (d)	per cow
		\$15.06	\$3,212.66	\$15.04	\$3,826.03
2. Less variable costs		\$11.50	\$2,452.24	\$10.65	\$2,709.59
3. Returns above variable costs		\$3.57	\$760.43	\$4.39	\$1,116.45
4. Less fixed costs		\$2.27	\$485.00	\$2.09	\$532.50
5. Returns to labor & management		\$1.29	\$275.43	\$2.30	\$583.95
6. Less labor cost 45 hrs. @ \$13/hr.		\$2.74	\$585.00	\$2.30	\$585.00
<b>7. Returns to management</b>		<b>(\$1.45)</b>	<b>(\$309.57)</b>	<b>(\$0.00)</b>	<b>(\$1.05)</b>
<b>VI. BREAK EVEN MILK PRICE (e)</b>					
1. Budget break even per cwt.			\$16.2825		\$14.7389
2. Actual milk price received this month			\$14.7347		\$14.7345
3. Actual price received this month+MILC payment			\$14.7347		\$14.7345

Source: Robert Tigner, former ISU Extension Farm Management Specialist, 2010