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NorthStar Cooperative INC.

The Point

The road to milk quality leads to profits

Nicole Mackinder

Money gets people's attention. Money in the form of milk premiums get dairy producers' attention. While producing high quality milk in the quest for premiums is a goal of many producers, the road to increasing milk quality often results in more… including savings on vet costs and reduced culling.

There are many ways to save money by managing herd health while earning milk check premiums, none stands out as much as managing the herd's somatic cell count (SCC). Strict standards for cleanliness and herd health are common place in maintaining a low SCC; but there's more. Learn what three NorthStar producers are doing to produce high quality milk. While each producer has a different key to their success, they all agree that taking care of the cows first will reap milk quality premiums.

A new milking system

Receiving Michigan Milk Producers Association's Top Quality Award in 2006, Tom and Shirley Carson of Hesperia, Michigan feel that a new milking system was the main reason they maintained a SCC average under 100,000. "We saw our SCC lower shortly after installing a new automatic take-off milking system back in 2002," states Carson. "The greatest benefit of the new system is that it helps control over-milking, preventing teat-end damage."

Decreasing milking time per cow by nearly one full minute, Carson immediately saw an improvement in teat health. In addition to better teat health,

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– Tom Carson

Eric, Ryan and Tom Carson

NorthStar's DHI Services Hot Sheet provides SCC results via email or fax as soon as the lab data is downloaded to the record processing center. Producers and consultants often receive this data within 48 hours of the DHI technician's visit.

The Hot Sheet provides information in two segments. The first lists all cows in index number order, along with their milk weight, percentages of butterfat and protein, linear somatic cell score (SCC), actual SCC, days in milk, lactation number and MUN (if run). The second portion reports the top 20 cows (or top 10 percent in herds over 400) that affect the total bulk tank SCC level. Additionally, it shows what the bulk tank SCC level would be if high cows were withheld from the tank.

More than 600 producers and consultants are currently using the Hot Sheet. To begin receiving the Hot Sheet free for your herd talk with your NorthStar DHI technician.

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Comprehensive solutions for producer results.

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changing to a new style of inflation liners, moving from a two to a three inch pipeline and upgrading the vacuum system were all factors that contributed to a lower SCC.

While the milking system certainly proved to be key in helping Carson lower the herd's SCC, another factor affecting the 85-cow Holstein herd includes the use of Bio Cycle Plus™. Frustrated with an average SCC around 200,000 and hoping to improve herd health, Carson chose to add Bio Cycle Plus to the ration in 2001.

"I had read an article that mentioned Bio Cycle Plus would increase digestibility, improving herd health," remembers Carson. "Prevention is really the key to managing mastitis, so I figured an improvement in the cow's health should help prevent mastitis and lower the SCC. After adding BCP to the ration our herd health has stayed consistent and that is an important part of managing SCC."

Another preventative step in controlling mastitis at Carson's dairy was through DHI records; specifically the Hot Sheet. "We keep a close eye on the cows and try not to let anything go to far," states Carson. "While we constantly do visual checks for hard quarters and other things, I follow my Hot Sheet carefully to see who is showing high numbers and then I have time to treat her before it gets out of control. I have a lot of confidence in my DHI records and they have become an accurate tool to help me manage the herd's SCC."

The steps taken to maintain a lower SCC have definitely paid off for Carson as he estimates an additional $8,000 per year in milk quality premiums. "It is a combination of many management procedures that help maintain a lower SCC," remarks Carson. "I figure with the size of our herd we might not produce as much milk as others, but what we do produce will be high quality."

> "More importantly is the fact that if your herd is healthy you will save money on management and then the premium comes in as a reward."
>
> – Mike Heckaman

Pre-fresh heifer protocol

While replacing the milking system was key for Carson, a change in heifer management was the answer to lowering SCC for one Argos, Indiana dairy. The 500-cow herd owned by Mike Heckaman was suffering from an outbreak of *Staphylococcus aureus* back in 2000 when the veterinarian suggested dry-treating the farm's first calf heifers prior to freshening.

"Our SCC was over 300,000 and through testing we realized we had a *Staph. aureus* infection in the herd," remembers Heckaman. After consistent testing we realized the bacterium was affecting seasoned cows at first, but then some of the younger animals started coming back positive."

With the *Staph. aureus* infection, SCC was increasing, so the farm implemented a heifer treatment protocol, similar to their dry cow program. Prior to freshening and before any milk leakage occurs, all heifers teats are scrubbed thoroughly and then treated with intramammary antibiotics. After cleaning and treatment, a barrier teat sealant, T-HEXX® Dry™, is used to prevent any dripping. During this protocol, employees wear poly milking gloves, which are changed frequently to prevent the spread of disease.

"We have found that keeping the teat sealed is the key to preventing bacterium from entering the mammary system," states Max Bollenbacher, herd manager and part owner of Argos Holsteins. "While we realize there is no cure for *Staph. aureus*, we have learned that in order to manage mastitis and lower our SCC the heifers have to be kept just as clean as the cows."

Similarly, to prevent cows from leaking the milking frequency was increased from two to three times a day. "When you have a cow giving around 80 pounds per milking and she has to stand there with all that milk in her she is going to drip and that is where the problems start," states Heckaman. "After increasing to three times a day milking, the dripping stopped. We saw a reduction in edema, and the udders were healthier overall."

Another management tool used at Argos Holsteins is DHI records. Although the herd has been on DHI test for over 60 years, Heckaman paid special attention to his Hot Sheet for individual high SCC numbers while battling the *Staph. aureus* infection. "The Hot Sheet really helped us keep an eye out for high SCC cows while we were working to reduce *Staph. aureus* in the herd," commented Heckaman.

A decrease in fresh cow mastitis and a drop in the SCC average to under 200,000 were significant improvements after starting the dry cow program on the heifers. That combined with the new cleanliness standards and close attention

Mike Heckaman and Max Bollenbacher

to the DHI Hot Sheet ultimately resulted in savings of nearly $12,000 through reduced culling of heifers, as well as an increase in premiums of over $15,000 per year.

As a result of the extra efforts aimed at herd health, Heckaman doesn't only gain milk check premiums due to a lower SCC, he saves money on vet costs and feels that is where the bottom line is truly affected. "It's not just about the premium earned with a lower SCC," declares Heckaman. "More importantly is the fact that if your herd is healthy you will save money on management and then the premium comes in as a reward. It is a great thing all the way around."

Kevin Marcks

Dedication and DHI

Kevin Marcks of Seymour, Wisconsin couldn't agree more with Heckaman and maintains his SCC of just over 100,000 by being proactive in the management of his 55-cow herd. Marcks feels familiarity with each cow is the most important tool he has to maintain consistent herd health. Combined with proper milking procedures, knowing the herd enables Marcks to recognize problems early on and for this reason refuses to let anyone else milk his cows.

"You just can't be too careful with milking procedures," states Marcks. "I know my cows and I know immediately when there might be a problem. As soon as I see any flaky skin or a hard quarter I can start treatment and prevent a full-blown case of mastitis."

Milked in a tie-stall barn, keeping cows clean at Wolf River Dairy is very important and starts with keeping udders clipped. At milking time, shavings and debris are brushed off before pre-dipping with EfferCept®. The use of disposable paper towels also aid in the prevention of spreading disease. Following milking a one percent iodine barrier post-dip is used to keep any bacteria from entering the teat canal.

In addition to personally milking every cow twice a day, Marcks also depends on his DHI records to help him catch any problems he may have missed. "I depend on my Hot Sheet to point out any possible mastitis I didn't catch," mentions Marcks. "I can also use it to gauge a cow and see if she is really making progress or if treatment needs to continue based on her individual SCC."

Much like Argos Holsteins, Marks has also struggled with fresh cow mastitis in the past and has implemented a dry cow program which includes T-HEXX® Dry™. "You have to keep her teats closed to keep bacteria out and T-HEXX has worked great in my dry cow program," states Marcks. "Overall I just try to keep them as healthy as possible and the higher quality milk my herd produces is a result of those efforts. If I am saving on vet costs it means the herd is healthier and the premiums come as a result of that."

While each farm displays a unique management tool for controlling their herd's SCC they all have common ground, including implementing strict cleanliness procedures, a commitment to herd health and relying on their DHI records for SCC information. Perhaps the most common factor is that by taking steps to ensure improved herd health, all three dairies have lowered their SCC, saved on vet expenses and earned higher milk quality premiums.

Controlling mastitis may improve reproductive performance

Not only is mastitis the most costly disease for dairy producers in the United States, it is also one of the three major reasons why cows are removed from the herd, followed by low production and poor reproduction.

In addition to cow and profitability loss, mastitis has also been proven to effect reproduction. The first report of a possible link between mastitis and reproduction was in 1991 and since then other reports have shown similar relationships.

In the University of Tennessee Dairy study*, milk samples were taken over an 11 year period from 758 cows. Samples were coded as clinical, sub clinical or uninfected based on bacteria analysis and presence of mastitis. Reproductive data were also collected and correlated with the time mastitis occurred. The results:

- Mastitis before first service delayed days to first service, increased days open and services per conception.
- Mastitis after first service increased days open and doubled the services per conception.
- Mastitis after pregnancy had no effect on reproduction.
- Sub-clinical or clinical mastitis both had the same harmful effect on reproduction.
- Different types of bacteria causing mastitis (gram positive or negative) had similar effects on decreasing reproductive performance.

When troubleshooting reproductive problems, if obvious answers can't be found it may be time to look at other less obvious reasons. Controlling mastitis may be one more way to improve the reproductive performance on your dairy.

**study available on-line at: www.nmconline.org/articles/reprod.htm*