The Catalyst

CANWEST DHI

1-800-549-4373 CANWEST DHI www.canwestdhi.com

LOWER SCC

By now, most dairy producers will have heard of the National initiative to lower Somatic Cell Count (SCC) penalty level to 400,000 cells, (down from 500,000), in 2012. The move to lower cell count here in Canada and around the world is positive, both from a milk quality perspective, but also from a producer profitability point of view.

SCC is a very good indicator of Mastitis infections, which to this day, continues to be the most costly disease of dairy cattle, robbing the industry of millions of dollars annually. Mastitis infections will be around for as long as we have cows, but improvements are still achievable and the payback is significant.

Thirty years after its introduction, DHI's routine cow SCC service continues to be one of the best tools available to help manage Mastitis. It's a reliable, cost-effective tool that allows you to define the situation and the problem.

Defining where you're at is usually the first step in making improvements. We're pleased to be part of the solution.

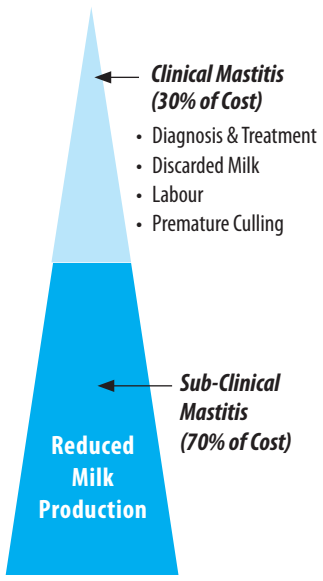
FINANCIAL LOSS ASSOCIATED WITH MASTITIS

In addition to the obvious costs associated with clinical cases of mastitis, subclinical mastitis is also very costly through the loss of milk production

Somatic cell counts (SCC), is one of the best indicators of sub-clinical Mastitis, and research has shown that approximately 85% of cows with an SCC level in excess of 200,000 cells/ml are infected with a mastitis causing pathogen. Furthermore, as SCC increases, so do milk production losses (figure 1).

EARLY DETECTION IS CRITICAL

Prevention through the use of best management practices is by far the best way to control mastitis, but effective treatment is also part of the strategy. In order to develop effective prevention and treatment programs, reliable and early detection of mastitis is important. Knowing which pathogen you're dealing with, in particular with contagious forms of mastitis, is critical.



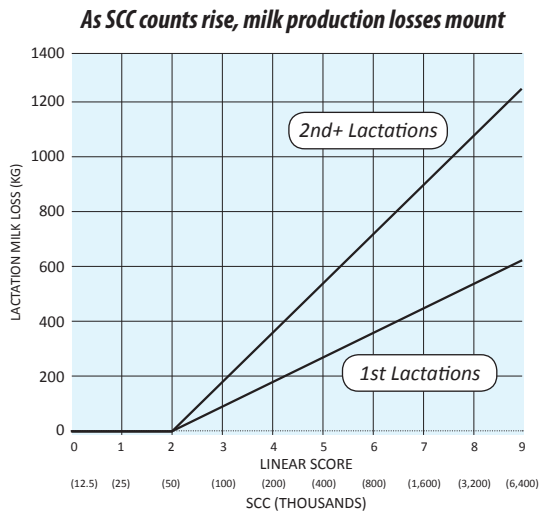


Figure 1: Adapted from G. Shook - University of Wisconsin

CHAIRMANS COMMENTS

As we are all aware, the national SCC is being reduced to 400,000 in 2012. As I have attended numerous winter meetings across Canada, it is great to see this issue on many dairy farm meeting agendas. Provincial marketing Boards, as well as other producer groups, are seeking input from different industry partners to address the new requirements.

The common message from everyone is that we will need to manage SCC on our farms and a lot of great ideas have come forward.

A speaker recently stated that "Farmers who are not willing to participate in a standard milk recording system will not be able to monitor udder health and will only temporarily reduce their bulk milk SCC". Others have said, "If you don't measure you can never improve".

Good record-keeping is going to become even more important in order to monitor individual and herd performance. It will require us to establish goals that are realistic and it is most important that we carry out our individual farm management plans to help reduce SCC.

CanWest DHI can be instrumental in helping you manage SCC by testing milk samples to identify different pathogens, and assisting in accurate record keeping.

Remember, DHI offers more than you think!

Ed Friesen
Chairman, CanWest DHI

Ed Friesen is a dairy producer from Kleefeld, Manitoba

SCC 101 - UNDERSTANDING THE BASICS

What are somatic cells?

White blood cells in milk, together with a small number of epithelial cells from milk secreting tissues, make up what are known as somatic cells. Somatic cells are produced by the cow's immune system to remove or destroy infection causing bacteria. When infection occurs in the udder, somatic cells are mobilized to go fight that infection.

What does an elevated SCC tell you?

The single most important reason for an increase in SCC is infection of one or more quarters with mastitis-causing bacteria. However, the level of SCC response and rise is not always consistent based on the type of bacteria or the severity of the infection. Based on research, it is well accepted that cows with a cell count greater then 200,000 should be considered as suspect for having a mastitis infection. As the SCC rise, so does the probability of an infection.

What is a normal SCC and can it be too low?

Given that somatic cells play an important role in immune response and fighting infections, a certain amount of cells is to be expected in the milk and is totally normal and even desirable. A count of zero, or extremely low is probably not ideal and may compromise the cows' ability to effectively respond to an infection. Counts in the 25-50,000 cells are perfectly normal, but lower counts should not be a cause for concern.

I'm curious, how is SCC actually measured?

When a milk sample is analyzed for SCC using an automated method such as at any CanWest DHI lab, the measuring principle used is called flow cytometry.

This means a very thin string of milk (think thinner than a human hair) is passed under a counting unit. The diameter of the string of milk is such that only one cell can pass under the counting unit at one time. Before passing through the flow cell under the counting unit, the milk is mixed with a fluorescent dye, which dyes the DNA molecules in the somatic cells.

When passing under the counting unit, the sample is exposed to blue light, which excites the dyed cells, making them emit red light. These red light pulses are magnified and counted to give the number of somatic cells per millilitre.

SCC naturally goes up in summer months - there is not much that can be done, right?

Only part of this statement is correct! Yes, on average mastitis infections and SCC levels do increase during the hot, humid summer months. HOWEVER, a large number of herds maintain low SCC well below 200,000 cells year-round.

It really comes down to keeping cows cool, dry, clean and minimizing the exposure to environmental bacteria. It does become more difficult to do during hot summer months, but it is very doable.

Mastitis expert is a big fan of routine SCC testing

Dr. Ken Leslie is a big fan of DHI's SCC service. He's a Professor Emiritus in the Department of Population Medicine at the Ontario Veterinary College at the University of Guelph and has a birds-eye view of the Canadian and international dairy industry. "Mastitis continues to be a very costly disease for the Canadian dairy industry. In my opinion, the use of DHI SCC data to monitor udder health status is an integral step in limiting the impact of this problem. A major strength of DHI SCC data is the fact that it is measured routinely, without request, on every cow that is milking. Furthermore, this information is returned to the herd in a format that is extremely useful for determining the frequency and distributions of cows with elevated SCC, as well as any changes in udder health status. As an ongoing monitoring tool, DHI SCC data is very difficult to beat, especially when used in conjunction with the Dairy Comp 305 Herd Advisor management program."

Sometimes bulk tank SCCs are high because of only a few bad apples in the herd. Knowing which cows are responsible makes it possible to either deal with them or cull them. But that's only a beginning. For example, the SCC data can also be analyzed to find out whether the cows that have just freshened have significantly higher scores. If so, that might be an area where corrections to the dry cow program, or early lactation program, can b e made.

Tank SCC and penalty risk

A study of Ontario herds by the University of Guelph has clearly demonstrated that DHI herds have lower tank SCC. Based on actual tank data, the study shows that non-DHI herds have a 40% higher risk of incurring SCC penalties at the new 400k cell level.

According to Dr. David Kelton of the Ontario Veterinary College, "Herds and veterinarians that have routine individual cow SCC data available are in a much better position to monitor and take action on udder health issue. Routine cow SCC continues to be one of the best tools available to assist us with mastitis and udder health management."

It pays to test!

The proof is in the pudding! We evaluated 539 herds that enrolled on DHI over the years and monitored their progress over the first two years of starting DHI. The results were nothing short of outstanding. By the end of year two, the herds on average have improved by:

305 Milk kg ..... +5.0%
305 Fat kg ..... +5.4%
305 Prot kg..... +3.5%
SCC.....-10.0%

For more information about how DHI can help you manage your herd for increased profitability, call us today at 1-800-549-4373.