

Taking Mastitis Management to a New Level

By MMPA Mastitis Management Team members
Tom Stakenas and Supervisor Tom Herremans

Every year, dairy producers who produce the best quality milk are recognized and honored for their efforts. Cooperatives, milk buyers and dairy educators all recognize the value of excellent milk quality and the fact that low Somatic Cell Count (SCC) is a critical indicator of overall milk quality. Animal welfare activists, consumers and retailers are also becoming more and more aware that low SCCs are good predictors of good management practices being used on top quality farms

Most milk quality specialists agree that low SCCs will be used more and more as a key indicator of milk quality in the future. Since it appears that low SCCs will play a significant role in consumer confidence in the market place and profitability on the dairy farm, just how low can SCCs be?

Mastitis Management at the 'Next Level'

Milk that is considered to be the 'best of the best' quality usually has an SCC that is around or below 100,000 SCC. A relatively small group of dairy producers are able to achieve an SCC that is consistently at or below 100,000.

This special group of dairy producers has truly taken mastitis management to the next level. Ironically, many of the producers who have achieved this exceptional standard of quality will modestly tell you that they do nothing special to accomplish consistently low SCCs.

This article will attempt to highlight some of the management practices and tools that are sometimes overlooked or underappreciated for their role in

mastitis management. If you want to manage mastitis at the 'next level' an accurate appreciation for what really causes elevated SCCs and an understanding of how and when mastitis infections occur should start to remove some of the frustration in trying to manage your way to a lower SCC.

Remember the Basics – Prevention, Prevention, Prevention

There is no question that the best treatment for mastitis is the case that never occurs. With this in mind, remember the basics – Prevention, Prevention, Prevention. Mastitis infection rates are directly related to the number of bacteria left on the teat tissue at the time the milking unit is attached. Simply stated, mastitis is nothing more than a numbers game. The more bacteria on the teat at milking time, the greater the risk for an infection, the less bacteria on the teat at milking time, the lower the risk.

Prevention Starts where the Udder Meets the Environment

The back two feet of the free stalls, tie stalls or stanchion stalls must be clean and dry to reduce the exposure of the teats to high populations of bacteria. One half of a cow's life is spent lying down. When lying down, the cow's body warms the area under her body, which actually incubates (grows) the bacteria that are there. Clean and dry means fewer bacteria to grow and fewer bacteria on the teat skin at milking time. Manure present and wet bedding at the udder contact



point increases bacteria numbers and the rate of new infections. Prevention efforts must start in the environment or all efforts will be less effective.

Prevention Enhanced by a Healthy Immune System

Today's high producing cows need a ration properly balanced to ensure that the immune system can operate at an optimum level. A cow's immune system is often taken for granted until it is not operating at it best. A wide array of health issues are being found to compromise immune system function and many of those disorders are tied to nutrition and metabolic disorders related to nutrition.

Prevention and the Milking System

Milking equipment must meet industry standards for design, capacity and function to milk cows quickly and gently. Even meeting all industry standards, milking equipment cannot compensate for high bacteria numbers still on the teat when the unit is attached. High bacteria populations remaining on the teat skin at the time of unit attachment, contaminates the inflations with mastitis pathogens,

and increases the risk of new infections even with the newest and best in milking equipment.

Awareness that milking equipment is truly limited in its prevention role by how clean the teats are when the milking unit is attached brings us to the final opportunity to prevent new infections—the milking routine—or, more specifically, the udder prep procedure.

Prevention and Udder Prep – the Last Opportunity

Udder prep, for which normally only a matter of a few seconds is allocated to complete, is the last opportunity to remove mastitis pathogens from the teat barrel and the teat end. In a matter of just a few seconds, the stage is set for milk letdown and bacteria number reduction from the teat tissue.

Any pathogen left on the teat skin has an opportunity to enter the mammary gland of the cow being milked or contaminate the inflation for the next cow to be milked. Many new infections happen during the time the milking unit is attached to the cow. A true appreciation that the udder prep is the last opportunity to prevent most new infections should cause every dairy producer who wants to lower his SCC to do an honest evaluation of his udder prep procedure and determine if it is as good as it can be.

Unfortunately, despite our best efforts in prevention it is impossible to eliminate all new cases of mastitis. So where do we go from here? A number of useful strategies can be implemented to manage the inevitable mastitis cases. Among them are developing written protocols and operating procedures on how to prevent, identify, and handle new mastitis cases. Incorporate technology and available tools to detect, identify and handle infections early on, and take advantage of outside resources to aid in identification and education.

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Attitude is everything – Management sets the tone!

Managing mastitis is a whole farm effort that starts first with the farm manager/operators ability to lead, motivate, and train employees in how to work towards the best milk quality possible. Management has the greatest influence: Initially by explaining how important milk quality is to the farm and then by providing an infra-structure and support system that enables employees to accomplish their job.

Develop written Protocols and Standard Operating Procedures

In today's dairy industry there is no room for error. As farms continue to increase in size and efficiency more emphasis is being placed on hired labor to make management based decisions. Protocols and Standard Operating Procedures (SOP) have become an industry standard for reducing harmful variation in many of the day to day activities on the farm. Good Protocols and SOPs are simple, direct and easily understood. They provide a concise roadmap to aid in training and decision making for farm employees. Once developed Protocols and SOPs must be followed. There can be no tolerance for those employees who are unwilling to follow Protocols and SOPs.

Early Identification

Identifying mastitis infections as soon as they occur can be a difficult task, because so many new infections are subclinical. Once an infection is established in the mammary gland, if it is not eliminated early, the chance of a cure is significantly reduced. Monthly SCC results on cows can aid in the early detection of a mastitis infection. Cows that have a SCC of 200,000 or greater are considered to have at least one or more infected quarters and should be monitored on a routine basis. Several methods are available to aid

in the monitoring of infected quarters. Of these methods the use of the California Mastitis Test (or CMT) is by far the cheapest and easiest to use. The infected quarters should be checked and recorded on a daily basis; increases in the severity of the infection should be dealt with immediately. Other monitoring tools include the Porta-SCC, and lab monitoring. While these tools will establish the SCC level of the infected quarter, they do not identify which mastitis pathogen is involved. Since some pathogens do not respond to antibiotic therapy, additional testing technology is being used on some farms to decide if treatment is an option.

Use Technology to Improve Management Decisions

Several forms of technology exists that can help management in mastitis based decision making. One such form of technology is the on farm culturing system. On farm culturing allows management to make a more accurate decision on whether or not the cow should be treated. This in turn promotes a more responsible use of antibiotics, reduces costs associated with treatment, and increase the likelihood that the drugs used will produce a bacterial cure, not just a clinical cure.

Herd management programs offer many tools that can aid in the decision making process. When used correctly these programs can be an insight to the root of the problem. Parlor performance reports can be used to evaluate the effectiveness of udder prep and the milking equipment. Herd tracking programs can be used to help determine the rate of new infects and identify areas of concern based on what stage of the lactation the cows are becoming infected.

Take Advantage of Outside Resources

Many resources are available



to help aid producers manage and control mastitis. Whenever possible, consult with your herd veterinarian, MSU Extension, or MMPA Member Representative.

Once again, MMPA will offer our Milker Training Schools to provide proven ways to reduce the rate of new infections in the dairy herd. This school provides an opportunity for both farm managers and their employees to understand the importance of a good milking procedure, the cow's environment, and its relationship to udder health.

Soon MMPA members will be getting a Milker School survey. If you think you may be interested in having you or your personnel attend a school in your area, please return the survey. MMPA uses the survey to determine Milker school sites based on demand. Returning the survey does not obligate you to attend a school. Later, you will receive a school registration form that you will need to return in order to attend a school. The registration form will include site location and dates.

MMPA also offers on farm Milker Training Schools available year-round at member request. The on farm Milker Schools provide an opportunity for a training session that is tailored toward your operation. These schools involve an evaluation of the current milking procedure, short informal discussion/presentation, and hands on experience. If you are interested in an on farm Milker Training School, please contact your MMPA Member Representative to schedule a time.