

The Latest in Mastitis Control and Management

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Abstract

This is a very interesting topic because there have not been major changes in mastitis control and management. The secret is still to pay attention to the “Mastitis Triangle,” which means looking at the people milking the cows, the equipment, and the cow’s environment. The most successful milk quality programs are those that look at the whole picture.

Instead of dealing with problem high-somatic cell count (SCC) herds, the biggest opportunities are with well-managed dairies trying to improve their milk quality program. These dairies want to milk more cows in less time, and control clinical mastitis and SCC. Working to change lag times for better let-downs, having the right vacuum in the claw during peak milk flow or changing automatic take-off (ATO) settings to shorten milking duration are ways to change milking performance. Assisting the farm to develop better cow traffic patterns and faster loading will also improve the performance.

By improving milk quality you can affect the profitability of a dairy. There is no one better to accomplish this than a large animal veterinarian. The opportunity is huge for those that are willing to get involved with their dairy farms.

Résumé

Ce sujet est très intéressant car il n’y a pas eu de changements majeurs dans la gestion et le contrôle de la mammite. Le secret consiste toujours à porter son attention sur le “triangle de la mammite” qui regroupe les gens qui traient les vaches, l’équipement et l’environnement de la vache. Le succès des programmes de contrôle de la qualité du lait dépend d’une vision globale.

Plutôt que d’insister sur les troupeaux problématiques avec un comptage de cellules somatiques (CCS) trop élevé, il serait profitable de cibler les fermes laitières bien gérées qui tentent d’améliorer leur programme de contrôle de la qualité du lait. Ces fermes laitières veulent traire plus de vaches en moins de temps tout en tenant sous contrôle la mammite clinique et le CCS. Il existe plusieurs façons d’augmenter la performance de la traite incluant un changement des délais pour accroître l’éjection du lait, l’utilisation d’un vacuum adéquat dans la griffe lorsque le débit maximal du lait est atteint et un changement des paramètres

par défaut déclenchant le retrait automatique pour minimiser la durée de la traite. L’assistance à la ferme pour développer une meilleure cadence de traite et un roulement plus rapide va aussi améliorer la performance.

L’amélioration de la qualité du lait peut influencer la rentabilité d’une ferme laitière. Personne n’est plus qualifié pour cette tâche qu’un médecin vétérinaire des grands animaux. Les possibilités sont énormes pour ceux qui veulent bien s’impliquer avec leurs fermes laitières.

Introduction

Dr. John Dahl once made the statement, “The half-life of mastitis control is at least 25 years.” Unfortunately this statement is still true today. It seems as though mastitis control still requires the same approach, such as the “Mastitis Triangle”. As veterinarians, our main goal still is to educate the dairy farmer the important interaction between the man, the machine and the cow. The real problem is after all these years, we just cannot get people to understand the real need for change, and therefore change doesn’t happen.

I have been doing mastitis control for over 30 years, and my approach is basically the same. I still look at the whole picture at each farm. I evaluate milking routine, I evaluate the milking equipment using NMC guidelines, and I look at the cow, her environment and her records. Only after I have all this information can I really provide dairy farmers with a plan to improve their milk quality. To have success, you cannot afford to leave any part of the “Mastitis Triangle” to someone else, because if your program fails it will be your fault despite whether the other players did a good or bad job. The veterinarian is the best team leader and is trusted to have reliable information.

In the past, most of my mastitis control work was on herds having a problem. The main goal was to help them get their somatic cell count (SCC) lower and keep it there. Now my consultations have changed more to parlor throughput, getting SCC to lower levels (<150,000) for more profit, helping reduce clinical cases from environmental factors, monitoring equipment function and training employees. The best part of these issues is, there is a never-ending job for any veterinarian interested in mastitis control. It seems like less time is spent with the cows and more time with the people, but that is fine. The new approach also gets me behind a

computer more, which is not all that much fun.

Most dairies are trying to find ways to milk more cows, with less labor, faster than ever before. Dairies' profitability definitely improves if they can milk more cows in an eight or 12-hour shift with less labor costs. In days past, it was acceptable to turn parlors 3 to 3.5 times per hour, but now many of my clients are getting the same parlors turned 4.2 to 5.0 times per hour with the same or less help. I work with dairies to accomplish this by fine-tuning milking routine so cows have maximum milk flows, work with equipment and get the automatic take-offs (ATO's) fine-tuned to come off sooner, fine-tune vacuum levels to minimize machine on-time, work with parlor loading by getting crowd gates designed to fill parlors rapidly with minimal people assistance, evaluate the records and look at the culture data.

Many parlors now have meters communicating to computers so flow data and parlor efficiency is easily evaluated. Items such as cows per hour, milk per stall per hour, milk in first two minutes, milking duration, peak flow and average flow can be monitored to see if cows are being prepped properly and milk is being harvested properly.

If a dairy has the right type of meters, changes can be monitored to see if the net effect is positive or negative. A huge problem with most mastitis control programs is that change is made, but no one determines whether the change was good or bad. Everyone just assumes things will improve, but you quickly learn that farms are not created equal.

Milking routines can still be monitored via observation and a stop watch. New tools such as the Lactocorder or Flow Scan Analyst can be used to help you determine flow patterns in cows. Both of these tools give you data that farmers can quickly relate to and hopefully understand the need for change.

The biggest change in milking routine is increasing the lag time (time from stripping to unit attachment) from 60 seconds to 90 seconds or more. By increasing the lag time, there are fewer cows over-milked at the beginning of milking. This decreases machine on-time and helps keep teat ends healthy. It is still important to work on a consistent milking routine and timing. Cows are creatures of habit and still respond best to consistency. Many dairies have lost the necessary time for physical contact to the teats because they are in such a hurry. If properly trained, you can get milkers to spend more physical time on drying the teat and end up with a cleaner teat and better stimulation.

Most ATO systems have two adjustable settings. You can adjust the end-of-milk flow rate and the delay time after the cow reaches the low-flow rate setting. For most herds with good production, the end-of-milk flow setting should be between 1.5 and 2.2 lb (0.68 and 1.0 kg). The delay time should be set somewhere between

1 and 3 seconds. The key point is not to make the changes too rapidly, but to take baby steps and move the settings in small increments every seven to 10 days until you reach your goal. It is important that the cows are monitored after each change so you don't make a problem rather than fix a problem.

The only vacuum level that really matters on any dairy farm is the vacuum in the claw during peak milk flow. Unfortunately, only a few dairies actually have their milking systems tested during milking. What a great opportunity for veterinarians! In order to minimize machine on-time, the ideal claw vacuum during peak milk flow should fall within the range of 11.5 to 12.5 inches (38-41.5 kPa). On many farms, the response is even better when the vacuum ranges from 12 to 12.5 inches at peak flow (40-41.5 kPa). There is no way to determine what the claw vacuum is, other than being there during milking and measuring it. If the milking system has not been tested during milking, it has not been properly tested.

A major problem on many dairies is poor cow loading. On many farms the cows are chased into the parlor rather than loading on their own. Cows are easily confused, and if they are chased into the parlor they will wait in the holding area until someone comes out and chases them in. Poor parlor loading can decrease parlor efficiency by 10 to 20% and waste labor usage. If a crowd gate is designed so it can be operated anywhere in the parlor by the milkers, so they do not have to leave their routine, the loading will improve. All crowd gates need a loud bell/buzzer that operates independently of the gate moving.

The bell/buzzer signals to the cows that it is time to go into the parlor. If the cows do not respond to the bell/buzzer, the gate electrifies when it moves so cows are gently shocked as the gate moves forward. The key to making this system work is to make sure the only time the gate is electrified is when the gate moves. Whenever the gate is not moving, the electricity should be off. The response by dairies that have made this change in crowd gate operation has been very rewarding.

Records hold many milk quality data points but few people look beyond milk production, butterfat, protein and SCC. It is the easiest to gather this data when a farm has their Dairy Herd Improvement Association (DHIA) data on a computer and uses Dairy Comp 305. You can evaluate the current status of the cows, the new infection rate, cow contribution to the bulk tank and fresh cow issues. It is really great to use the dairies' own records to impeach most of their ideas or concerns. I have found most dairies really don't have a clue as to where their real milk quality issues are coming from. It is hard to control a SCC by selling chronic high SCC cows when a high percentage of heifers and cows calve

with a high SCC. By knowing where the problems are, you have a much better chance of making a positive impact on the dairy.

By knowing the bacteria on a dairy, you can fine tune your mastitis control recommendations to deal specifically with these bacteria. I like multiple-day comingled bulk-tank cultures, fresh cow cultures and clinical cultures to get a better idea where the herd problem is coming from. Many dairies are now interested in on-farm culturing programs so they can use the right treatment for the right bacteria. Veterinarians can work closely with dairy farmers, assisting them to set up good on-farm culturing programs and then provide the training and monitoring of such systems.

Mastitis, a great disease or what? Dairy veterinarians have a huge opportunity in the field of mastitis control. Based on many surveys done of dairy farmers, one of their top three requests is more mastitis control services by their veterinarians. They are not just interested in their veterinarian treating clinical cases, but instead want their veterinarian's help in preventing mastitis, keeping the herd SCC low and the herd healthy, and training the ever-changing population of employees. Even though there have not been great new programs in mastitis control, the basics still exist and provide a huge opportunity for all veterinarians if they choose to do it.