

Your Milking Routine

– The Cornerstone to Milk Quality

by Tom Herremans
Mastitis Management Supervisor

Last month's article about outstanding milking performance focused on the skillful execution of an excellent milking routine.

Important objectives, such as fast milk out, reduced unit on-time, less stress on the teat ends, excellent cow throughput and fewer exposures to new milking time infections, can be achieved by putting an excellent milking routine in place on your farm. To achieve these objectives, your milking routine must be designed around the milk letdown hormone oxytocin.

Oxytocin – Misunderstood; Frequently Missed Opportunity

While the facts about oxytocin and milk letdown are often misunderstood and misinterpreted, three important truths must be understood:

1. Maximum oxytocin production requires 10 to 20 seconds of physical manipulation of the teats and teat ends (stimulation),
2. Oxytocin actually forces the milk out of the alveoli (where milk is produced and 85% of it is stored) into the ducts of the udder for easy removal,
3. Oxytocin has a short life and starts to dissipate from the blood stream quickly after being produced.

Oxytocin Myths

There are two misleading statements dairy farmers have heard from time to time regarding milking routines:

1. Cows learn to respond favorably to any routine "even if it is wrong" as long as the routine is always done the same.

2. Today's cows do not require stimulation to be milked.

While each statement contains a small element of truth, both are dangerously misleading and, in some respects, dead wrong.

The statement that claims cows "learn to respond to consistent routine even if it is wrong", is dead wrong. I had the opportunity to collect unit on-time data in a herd where the only adjustment made to the routine was to improve the timing between stimulation and unit attachment. The reduced unit on-time was dramatic. When the routine was changed back to the original timing between stimulation and unit attachment, the unit on-time increased to match the original times collected before the adjustment had been made. The data collected from the dairy farmer's milk meters and computer system proved that the cows did respond favorably to a well-timed routine and did not respond favorably to a routine with faulty timing just because it was performed consistently.

Regarding the statement that "today's cows do not require stimulation to be milked:" Yes, you can milk cows without stimulation but it takes longer, there is more teat end trauma and more residual milk. University research trials and data collected on farms with metering systems have shown

Your Milking Routine...
– Build One That Works!

over and over that properly stimulated cows with the milking units attached at the correct time have significantly reduced unit on-times, spend less time in low flow mode and have less residual milk.

Milking Routines are Not Created Equal

Many times the success of a milking routine is based on what time milking got done. While this criteria may have some validity, I would point out that a poor milking routine also gets milking done and often gets done on time.

The time spent milking tells us very little about the interaction between the person milking and the cow or the interaction between the cow and the milking equipment.

A cow may evaluate the milking experience based on how she was handled, if she was fearful, how long the milking unit was attached to her teats, if her teats hurt before she was done and how many liner slips she experienced.

My point is that a milking routine should be designed and implemented based on what is good for the cow first and what is convenient for the person milking second.

Fortunately, a properly designed milking procedure and routine can be good for the cow and convenient for the person milking.

The terms "procedure" and "routine" are sometimes used interchangeably. For the purposes of this article, they are defined as:

- Procedure: Refers to the individual tasks performed in udder prep e.g. apply dip, fore-strip, wipe, attach unit, etc.

- Routine: Includes the tasks performed, the sequence of the tasks, the time allowed for each task and the time lapse between tasks.

Design Your Milking Routine Around Oxytocin

If you can accept the truths about oxytocin, you can design a milking routine that has very specific goals in mind. All the tasks performed, the technique by which they are performed, the time spent doing each task and the time between each task are all specific and defined. The end result of a well-defined routine is that it is performed exactly the same by every person that milks cows, everyday, on every cow. A standardized routine that is sound in the technique and specific in the timing sequence of the tasks will produce more predictable results regarding milk quality and milk letdown.

Cows always respond more favorably and more predictably when they are handled with properly designed and executed milking routine that is performed the same all the time. A cow's system responds largely to stimuli. Since she has little or no control over her own body's hormonal response to stimuli, it is the responsibility of the person milking to expose each cow to the correct stimuli.

Long Unit On-Times Are A Mastitis Risk

Today's high producing cows require longer unit on-times to harvest their milk. That longer unit on-time and, more specifically, the time spent in low flow have been identified as major contributing factors to the number of cows with rough teat ends (hyperkeratosis). The longer a

cow stays in low flow, the more likely she will experience liner slips – many of which are not even heard by the person milking. Hyperkeratosis and excessive liner slips both show a strong correlation to an increased risk of new mastitis infections.

Yes, cows milked with poor milking technique and little or no stimulation do give milk but the unit on-time will be longer and the time spent in low flow mode will be especially long.

Excellent Milking Routine: Low cost – High Value

Your cows deserve the best milking routine you can provide. There is no capital outlay required to establish an excellent milking routine as opposed to one that simply gets the cows milked. What is needed is a commitment to a routine that is best for the cow and still meets your needs for milking speed or cow throughput.

An excellent milking routine that has the potential to pay large dividends in milk quality, milk value and mammary health is an investment you cannot afford to overlook.

Building A Milking Routine That Works

Every farm that wants to establish an excellent milking routine has that opportunity, regardless of milking facility, type of udder prep used or the number of people milking. The basic but critical elements that must be incorporated in every excellent milking routine are:

1. Stimulation time of 10-20 seconds per cow. This physical manipulation of the teats is necessary for the full release of oxytocin. It is normally accomplished by cleaning the teat and teat ends and fore-stripping. If fore-stripping is done, it should be done at the same time as the cleaning to accomplish the maximum stimulation.

2. Milking unit is attached 60-90 seconds after the start of stimulation. This time (prep-lag time) is a must to fully utilize the oxytocin made available by the stimulation. This timing is important to milk out because the oxytocin arrives at the mammary gland approximately one minute after stimulation and starts to diminish in the blood stream almost immediately.

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Any deviation from these two critical elements in a milking routine will result in losing some portion of the potential for maximum milk letdown. Recognizing how important udder prep procedure and milking routine are to milk quality and milk letdown, it is not realistic to expect an excellent milking routine to just happen.

An excellent milking routine is the result of a well thought out design that defines every aspect of its execution. If you want the routine to be executed the same way, by every person, on every cow, then it must be well defined.

An effective routine must include the two critical elements of stimulation time and prep-lag time as described above, but should go further to define:

- Every task to be performed
- How each task will be performed (technique)
- How much time will be spent doing each task
- The sequence in which the tasks will be performed
- How much time is allowed between tasks

Specific Tasks Are Farm Specific

The specific tasks used on each farm, the technique used and the sequence of the tasks will vary from farm to farm. The different combinations of tasks are so numerous that they are impossible to identify in list form. But any differences or combinations used cannot be allowed to alter the two critical elements of a good milking routine, namely adequate stimulation time and proper prep-lag time as defined earlier. You cannot shortcut stimulation and prep-lag time without having some negative impact on your cows.

Milker Training Schools – A Unique Opportunity

A milking routine that is built on the idea that it has to work well for the cow and is still convenient for the person milking is taught at MMPA's Milker Training Schools.

MMPA's tenth season of Milker Training Schools will be offered during February and March 2006. The sessions not only teach techniques, procedures and routines that are good for your cows but also offer suggestions on how to do milker evaluations. The evaluations include all aspects of milking parlor activities and are printed out for several different parlor situations and routines.

If you are interested in picking up some ideas that may improve milking performance on your dairy, watch for the Milker Training School schedule and sign up that will appear in the January *Milk Messenger*.

The schools are a service MMPA provides to its members. There is no fee for you or your employees to attend the schools.

NEXT MONTH: We will offer suggestions about how to implement a milking routine, how to train new and old employees and how to keep the routine from changing.

Welcome New MMPA Members

The MMPA Board of Directors recently accepted the following new members:



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