Milking parlour hygiene and management

by DVM Joséphine Verhaeghe and Jim Eayrs, CID LINES, Belgium.

The milking parlour is the roundabout of the dairy farm: it is a traffic junction, an obligatory passage, moving smoothly if well managed! Every day, the cows enter the milking parlour two or three times to be milked.

The milking parlour is the place where the farmer obtains the milk, the end-product of the dairy farm.

Adapted to the cows, the milking parlour is a tool to optimise milk production. Adapted to people, the milking parlour is an easy place to manage, and a pleasant working environment for milkers.

Profitability is directly related to this cornerstone of each dairy farm. Efficacy and quality of production depends on good milking practice:

- Milking efficiency is influenced by time management.
- Milk quality is influenced by hygiene during milking and by the hygiene of the pipelines.

First, this article will look at the risks associated with poor parlour hygiene and management, then the need to satisfy will be detailed and, finally, how to organise and optimise the milking routine to increase profitability of the dairy farm will be considered.

Parlour hygiene

As an example, let us presume a visit to a milking parlour during the milking process. The cows are dirty and wet and the cluster is attached without teat preparation. Some 30-45 seconds after entry the clusters on a number of cows are ill fitting, allowing cluster slippage.

During milking, two cows remove the clusters before the end of the milking. After a few minutes, several cows are moving, and it takes one extra minutes before the clusters are automatically removed (the milker is in the barn to collect the next cows). Teats are disinfected on the way back to the barn, with an automatic system.

In this kind of worst case scenario, the milking procedure is totally oriented on speed and minimum work load. The milking parlour is rather small compared with the size of the herd and they milk three times a day which makes it almost constantly busy.

The risks relating to poor hygiene associated with such a procedure include:

- **Poor milk quality**

Because teats are not cleaned before milking, dirt and bacteria from the environment enter the milk lines. This leads to the creation of biofilm and an increase of the total bacteria count.

Teat disinfection is not done properly, half of the teat ends are not disinfected after milking, while the sphincter is open and the risk of contamination is very high.

- **Mastitis cross contamination**

Air inlet means entry of air and bacteria in the milk lines, modification of the vacuum, and risk of bacteria propelled directly into the teat canal (the sphincter is open!) Infection status of the animal is not known.

As the cows 'share' the milking parlour, they also share pathogens. Infected milk contaminates the teat liners, which is then a vector of transmission from an infected quarter to a healthy one.

Chronically infected cows, with high SCC are a reservoir of pathogens for the herd. The defence system, the teat sphincter, is skipped during milking and this results in new infections.

- **Spread of pathogens**

All the animals confined in a limited, dirty and wet place is ideal for germ transmission: from cow to milker, from milker to cow, from cow to cow, from environment to cow and from cow to environment.

The risks related to poor management include:

- **Poor stimulation**

The milk is stored in the udder alveoli and has to be transferred to the cistern in between two milkings. Under natural conditions, the milk let down is stimulated by the calf suckling the teats.

The oxytocin action is maximum after 60-90 seconds. Stressful parameters slow and even diminish milk release.

Adrenaline (the hormone released by fearful animals) blocks the action of oxytocin on the udder. No preparation of the teats, and disturbing or frightening noises can cause vacuum on the teats, leading to bad teat condition and animal discomfort.

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Dirty and wet cows pose a significant risk to hygiene procedures.

Fig. 1. Proper milking routine for mastitis control and milk quality.

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● **Long waiting time**

The first cows coming to the milking parlour are milked immediately, whereas some cows are waiting minutes before being milked. The last cows are often the weakest: standing time enhances poor feet condition and increases lameness.

● **Poor working conditions**

Being under time pressure is generally not associated with pleasant working conditions. A wet and dirty place is not optimal either and stressed and agitated animals are more difficult to handle. Poor hygiene and deficient management have tremendous consequences on milk production. Some farmers are performing, while others are fighting to keep the TBC, mastitis level and SCC below the limits. What makes the difference? The key to success is not in different basic practice but by practicing the basics differently. Looking at the needs of a cow and the requirements for hygiene is a relevant approach to increase efficacy and quality of milking parlour hygiene and management.

The cow's needs

What does a cow need to give milk? Understanding natural cow behaviour allows you to take advantage of the natural ejection process.

● **Calm and comfort**

Calm animals are easier to handle and the release of milk also improves. The harvesting of the milk is more efficient when animals, people and facilities interact smoothly.

A comfortable milking procedure (correct vacuum, teat preparation miming the calf stimulation) is a pleasure for the cow. The milking time is associated with a positive feeling.

On the other hand, uncomfortable milking and a stressful atmosphere are associated with negative feelings.

Previous bad experiences are remembered by the cow and the same circumstances (the milking parlour, the voice of the milker) can lead to fearful reactions.

● **Habits**

Cows are creatures of habit. They are reassured by repetition of the same order to enter the milking parlour and by the same milking procedure.

Constant change (different milkers, different practice, different group order) does not allow the cow to learn the pattern and to be confident. Routine is ideal to optimise the milking process!

● **Preparation time**

The same routine performed at every milking for 60-90 seconds will optimise milk let down and speed of milking.

● **Short waiting time**

Some 20-21 hours per day are dedicated to fulfilling natural behaviours such as eating, drinking, resting, standing in alleys or in the stall. Top productive dairy cows spend three extra hours at rest compared with average cows!

The milking routine has to be integrated into this schedule without disturbing too much of the natural behaviour.

Therefore, the longer the waiting time, the shorter the resting time and the lower the milk production. The cow has a strong need to rest and basically the milk is produced during resting time. Now let us look at the requirements for hygiene:

● Routine for quality of the milking process.

● Time to prepare the animals.

It is possible to combine the cow's needs and hygiene steps as these two criteria are highly compatible with the natural behaviour of dairy cows.

Optimum organisation

Keeping in mind the risks associated with poor hygiene and deficient milking parlour management, and considering the needs of the cows and the requirements for hygiene, we can deliver an optimum milking routine.

Fig. 1 on page 17 describes the basic protocol with necessary steps for maximum hygiene.

This has to be implemented in the different farms, with various milking parlours and organisation designs.

Time management and training people are essential to reach an ideal milking routine. Depending on the size of the milking parlour, two different approaches can be chosen:

● The sequential approach (each milker realises one specific step of cow preparation).

● The territorial approach (each milker is assigned to some milking units and he does the whole preparation for one animal).

The detailed and practical preparation approach is preferably discussed in-situ, with the data of the farm. The personalised approach is essential to guarantee the success of the milking routine!

The two main parameters influencing the profit made from the milking parlour are the milk quality and the parlour performance.

This is the result of a good routine, respecting cows' natural behaviour and complying with hygiene requirements.

Optimising the time organisation and the interactions between cows, people and facilities are valuable steps that every dairy farm should practice on a regular basis to allow constant improvements and a return on investment. ■

References are available from the author on request