

PREVENTION OF MASTITIS

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Summary

This work presents the secondary sources of contamination, prevention of mastitis and a teat assessment method, correlated with milk quality.

Key words: cow, mastitis, teat score

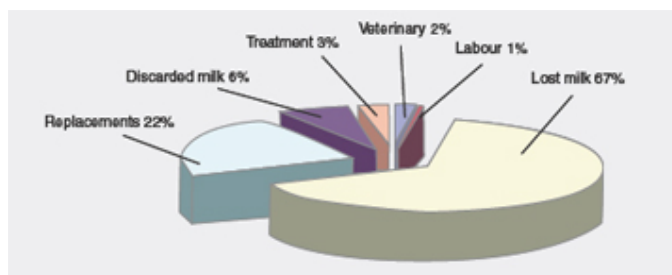
Environmental organisms. Environmental organisms live in the cows' environment and are always present. *E. coli* bacteria are environmental pollution organisms which live in faeces, polluted water and bedding material. Excellent environmental and premilking teat hygiene is needed for their control. They are not susceptible to antibiotics. *S. uberis* live almost everywhere, from the rumen and faeces to the udder. They can be controlled by proper sanitation and milking clean, dry udders.

Contagious organisms. Contagious organisms are spread by hands, milking units, etc. They include *S. agalactiae*, *S. aureus* and *S. dysgalactiae*. *S. agalactiae* lives in the udder and cannot exist outside it. It is susceptible to penicillin and once eliminated, usually does not return to the herd unless infected cows are purchased. *S. aureus* lives in the udder and on the skin surfaces of an infected cow. It can be controlled effectively with good management and is moderately susceptible to antibiotics when the infection first involves the gland. Older infections usually do not respond to treatment. Severe cases may cause death. *S. dysgalactiae* lives almost anywhere, from the udder and rumen to faeces and the barn. It can be controlled with proper sanitation and is moderately susceptible to antibiotics.

Prevention It has long been known that the rate of new infections increases with the number of bacteria at the teat end. Previous associations have been made between clean housing, clean cows and lower bulk tank somatic cell counts. An index of environmental sanitation based on the amount of manure present on the cow and in her environment was a predictor for the occurrence of coliform mastitis in one study. A recent tail-docking study completed at the University of Wisconsin-Madison demonstrated a significant increase in the prevalence of environmental mastitis pathogens as poor udder hygiene scores increased. A good milking routine is essential for good udder health.

Udder health

Mastitis. Mastitis is the most expensive disease in the dairy industry today. Losses are estimated to be as much as Euro184 per cow annually. It is obvious that dairy farmers must control this disease to achieve maximum profit from their enterprise.



Mastitis-causing organisms. About 95 percent of all infections are caused by *Streptococcus agalactiae*, *Staphylococcus aureus*, *Streptococcus dysgalactiae*, *Streptococcus uberis* and *Escherichia coli*. The remaining five percent are caused by other organisms.





Teat condition

The physical condition of cow teats is an indicator of the quality of the environment, milking management and milking system used. It can also be used as an indicator for the risk of intra-mammary infections. Mastitis risk is a numbers game. Greater numbers of bacteria near the teat-end, increase the risk of infections occurring. Teat sores and cracks provide sites where bacteria can multiply. They can be painful to the cow, causing her to kick, defecate more frequently during milking and decrease milk let-down. Healthy skin is easier to keep clean.

A scoring system for teat-end condition

The teat evaluation procedure should be standardized – always conducted either before or after milking, by the same person, on the same group of cows. Teat-end condition should be reevaluated after any changes (altering teat dip, pre-milking procedure, liners, milking machine, pulsation or vacuum) are made that may impact teat health. Cow teat condition provides important information about the herd's udder health status.

Teat score

	<p>N N ring The teat end is smooth with a small, even orifice. This is a typical status for many teats soon after the start of lactation.</p>
	<p>R Rough ring A raised, roughened ring with isolated fronds or mounds of old keratin extending one to three millimeters from the orifice.</p>
	<p>S Smooth or slightly rough ring A raised ring encircles the orifice. The surface of the ring is smooth or it may feel slightly rough, but no fronds of old keratin are evident.</p>
	<p>VR Very rough ring A raised ring with rough fronds or mounds of old keratin extending four millimeters or more from the orifice. The ring's rim is rough and cracked, often giving the teat end a "flowered" appearance</p>

Teat-end condition scores may reveal the quality of herd management, the correctness of the milking system and milking process, the existence of unacceptable environmental conditions and existing infectious diseases. Good herd

management might aim to keep or reduce roughness scores of R or VR to below 20 percent of teats scored.

Source (adapted from): Animal Sciences Group at Wageningen University, Lelystad.

Hygiene score

Keeping cows clean is an essential part of environmental mastitis control. This applies to dry cows, heifers and lactating cows. The amount of dirt on cows indicates the degree of farm hygiene. The incidence of udder and skin infections increases rapidly as the cows become dirtier. It is a group score, and a one point rise in it can increase bulk tank's somatic cell count by 50 000 millilitres.

Hygiene score cows on a scale of one to five on the udder (fore and rear udders, udder floor and teats) and the lower rear legs (from hock to floor, including hoof). If there are cows scoring three to five on hygiene, please try to find out why they are so dirty and make appropriate changes. Dirtiness may be related to the health of the cow, nutrition, the space in which the cow is kept or environmental issues such as bedding or manure scraping.

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