

Environmental Mastitis: Reduce Bedding Bacteria Account

One of the most frustrating and costly problems on most dairy farms is mastitis. Mastitis is an inflammation of the mammary gland usually caused by bacterial infection of the udder tissues. Mastitis can be caused by both environmental and contagious pathogens (disease-causing organisms). The primary source of environmental pathogens is the environment in which a cow lives; sources of contagious mastitis are infected cows and transmission is from cow-to-cow.

Various testing techniques are necessary to determine the type of organism causing the infection and the infection level of the herd or individual cow. While clinical mastitis (abnormal milk) is easily detected, major economic loss is due to sub-clinical mastitis when milk appears normal to the eye but the udder is still infected. Sub-clinical mastitis can only be detected by bacterial culture or the somatic cell count (SCC). Consequently, routine SCC on each cow in the herd is an effective monitor of the degree of sub-clinical mastitis and is an excellent management tool to evaluate a mastitis control program.

Approximately 40-45% of the mastitis cases in low SCC herds are caused by environmental pathogens, which can be difficult to detect because of their short duration. Cows in low SCC herds are most susceptible to environmental streptococci and coliform infections after drying off and just before calving but although mammary inflammations appear in early lactation. Procedures such as J5 vaccination and vitamin E selenium supplementation can help increase the cows' immunity, but reducing exposure to disease organisms is still the best way to prevent new infections.

Straw, shavings, sand and cow mattresses are all commonly used for bedding or stall surfaces for dairy cattle. Clean, dry and comfortable bedding at all times are no longer negotiable goals or standards. Clean, dry conditions limit the growth of pathogens and the exposure of the cow to unhygienic conditions. It is essential to develop and implement a mastitis control program to keep mammary glands healthy and reduce infection in the herd. Procedures to control the rate of new infection must focus on reducing teat-end exposure to infective micro-organisms.

Tips to Reduce the Risk of Mastitis

- Whichever bedding material you use, keep as much manure out of the stall as possible.
- If you use an organic bedding material, such as straw or wood shavings, clean off the back one-third of the stall and add 1 to 2 kg of fresh bedding daily, clean out the stall completely each week and re-bed with fresh bedding.
- In sand-bedded stalls, do not turn or "till up" the bedding. Damp sand below the top of the bedding contains millions of bacteria. Turning up this layer can cause an increase in environmental mastitis as the cows are newly exposed to these high bacterial numbers. Instead, remove sand when it becomes heavily soiled with manure, urine or milk, smooth the surface and add fresh sand to maintain a level-

- resting surface just above the height of the curb (approximately 7 to 8 inches depth).
- Keep udder hair clipped. Unclipped udders accumulate more dirt, take more time to clean and prepare for milking, make it more difficult to properly sanitize the teats, and increase the likelihood of incomplete drying. Hair left long around the teat can also be drawn into the teat cup along with the teat during milking, carrying with it millions of mastitis-causing organisms.
 - Keep feet well trimmed and healthy to promote exercise, feed intake and good overall health.
 - Remember, on hot days, cows tend to congregate - and therefore dung - around watering troughs and in shaded areas. When this happens soon after milking, while the teat ends are still partly open, there is a good chance that some bacteria from the environment will enter the teat end.

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