Heat of the Summer

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As we enter the dog days of summer, it is common for dairy farms to face increased clinical mastitis cases due to coliform bacteria. In our milk quality lab at Northern Valley, we culture more E. coli and Klebsiella species in the summer. These two pathogens can cause toxic mastitis, which would be referred to as grade 3 mastitis. This means that the cow is sick, the milk is abnormal, and the quarter is abnormal. This is a consistent seasonal trend that is seen in the summer. Increased temperature and humidity allow bacteria in the environment to multiply faster. This means that teat ends are exposed to higher numbers of environmental bacteria, which results in more mastitis infections. Stepping up your environmental mastitis prevention practices can minimize this seasonal trend.

Bedding management is very important, because of the amount of time that teat ends are in contact with bedding. Remove soiled bedding and add fresh bedding more frequently to maintain bacteria counts below acceptable levels. A bedding culture could be performed to make certain that bedding management is adequate to maintain bacteria counts below 1 million colony-forming units per milliliter. If using sand-bedded freestalls, this is a good time to remove and replace all sand from the back third of the stalls. Dig them out! However, I often hear from producers that they feel they have more mastitis right after digging out stalls. I think this may be true, because when you dig, you do bring some dirty sand to the surface. This is only a temporary challenge and the benefits of digging stalls far outweigh the negatives.

Ensuring sufficient air speeds to minimize heat stress also acts to dry bedding surfaces, which will limit the moisture required for bacterial growth. Have fresh feed available when cows return from milking, so they remain standing to eat while their teat sphincters are in the process of closing and always scrape alleyways during each milking.

Equally important is careful udder preparation prior to milking. Be alert while pre-stripping to identify clinical mastitis cases and exclude this high SCC milk from the bulk tank. Since teat surfaces will have more bacteria present, be meticulous about pre-dip coverage, pre-dip contact time, and toweling to clean and dry the teats. Don't forget to dry the teat end before applying the unit!

Vaccination against *E. coli and Klebsiella* can help reduce number and severity of coliform mastitis cases but will not prevent all cases. The most common strategy for administering coliform mastitis vaccines is to time the vaccinations with the production stages. For example, 3 doses are given per lactation: at dry-off, when moved to the pre-fresh pen, and a few weeks after freshening. (Likewise, heifers are vaccinated at 7 months of pregnancy, at 8 months of pregnancy, and a few weeks after freshening). Because immunity wanes after a few months, some herds give an additional booster to mid-lactation cows at the beginning of summer, to stimulate immunity prior to the summertime.

Benefits of this strategy:
1) aligning peak immunity with the highest risk periods for new coliform mastitis infections in the pre-fresh period and early lactation,
2) combining vaccine administration with times that cows are handled for other reasons (e.g. dry cow therapy, pen moves, other vaccinations, etc.),
3) avoiding milk loss associated with vaccine response (2 doses are given during dry period).