Coliform mastitis treatments that are timely, effective and rare

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There are few occurrences on a dairy farm that are more disappointing than realizing one of your better cows has come down with a severe case of mastitis. These cases can be severe enough to lead to the death of the cow in some cases, even with intervention and good intentions. With the recent damp, rainy weather, I have been on several farms that have struggled with this frustration lately. I do not have an easy answer to solve this problem for all dairy farmers but will discuss the importance of focusing on how to make treatments that are timely, effective and rare on your farm.

These severe cases of mastitis are generally caused by coliform, environmental bacteria that can include E.Coli or Kebsiella species. They are gram negative bacteria that release severe toxins into the udder which causes extensive damage in the udder of the cow as well as systemically throughout the cow's body in severe cases. This all happens rapidly once the bacteria is in the udder and the infection is set up. This is the reason any treatment options need to be started immediately to have good results. If you wait around to see how the cow is doing until the next milking to decide on starting treatment, it may be too late. Early treatment usually involves either oral or IV fluid therapy, anti-inflammatory medicines, or other supportive care as developed for your farm's treatment protocols. Potentially systemic antibiotics may be used if the cow is showing signs of severe or worsening general health conditions.

From an effective treatment perspective, it is important to keep track of how your farm's treatment protocols are working. Keeping track of treatments and their results, and reviewing this data with your veterinarian and on-farm animal health team, are important to assure you are getting the best results possible. Culture of at least some of the cases on your farm gives valuable information about the specific bacteria involved, possible sources of the bacteria and some guidance on the effectiveness of specific antibiotics for treatments. Use of and review of mastitis vaccine protocols in place on the farm are also important, as some vaccines make treatment results better even if they don't prevent all of the infections.

Making the need for treatments rare is the ultimate goal for severe environmental cases of mastitis. This means preventing them in the first place. In this short article there is not time for an in-depth outline of everything potentially involved with prevention. General factors include vaccination protocols, immune system health, genetics, sound nutrition and feed quality, milking system functionality, milking procedures, adequate ventilation, bedding

programs and tending of stall beds. Work with your farm advisors and on-farm personnel to fine-tune these areas.

Related to the recent situations I have seen, an important factor to discuss is bedding materials and stall design. An understanding of environmental factors related to bacterial growth include the need for bacteria to have organic material to grow on, adequate moisture, generally neutral pH, and increased growth rates with increasing temperatures. If manure buildup and leaked milk is added to the mix, that can make matters worse for total bacteria that the teat ends are exposed to while lying in their stalls. With this in mind, certain stall and bedding situations may be better or worse for bacterial growth to occur.

Sand bedding or other inorganic materials like lime in various forms are harder for bacteria to grow in unless significant organic materials are added over time. Some materials like manure solids, shavings, straw or other organic materials may work well as bedding as long as they stay relatively dry, but may cause problems when we add moisture. Recent damp, rainy weather has caused this to occur, especially if stalls are not kept clean and dry enough through management and adding dry bedding. Deep bedded stalls provide a lot of comfort for cows, but can be susceptible to build up of moisture and contaminated organic materials. They can serve as a warm, sponge-like situation when cows lie down for several hours in a stall with their body weight and heat putting contaminated bedding into contact with their teats. Compost barns or bedded packs can also do a similar thing, especially if they are not tilled adequately or enough bedding is not added to control moisture and generate the necessary heat required to kill bacteria.

Every type of bedding and stall system has its strengths and weaknesses. Certain types are easier to manage than others when it comes from a mastitis prevention perspective. It is important that you develop your long-term planning in regards to housing and management decisions with these factors in mind. Hopefully that will lead to many more good days than bad days on your dairy farm in regards to the frustrations with severe environmental mastitis.