Winter Feeding Sites and Calf Scours

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As cows feed on a small protected site during the winter, the site builds up with manure and wasted hay. The smaller the site and heavier the cow density, the faster the increase in organic matter and potential disease-causing organisms. Use of the same site year after year without adequate cleaning also contributes to this problem. Because winter feeding sites often double as spring calving pastures, producers should consider the role they play in the incidence and severity of calf scours.

Two primary sources of scour-causing organisms for newborn calves are a herd's cows and heifers and contaminants in the feeding site/calving pasture.

Organisms such as *clostridium perfringens*, *cryptosporidia*, *coccidia*, *E. coli* and *salmonella* may survive from year to year in organic matter and pass directly from cows to calves. Organisms such as rotavirus and coronavirus are acquired each calving season directly from cows.

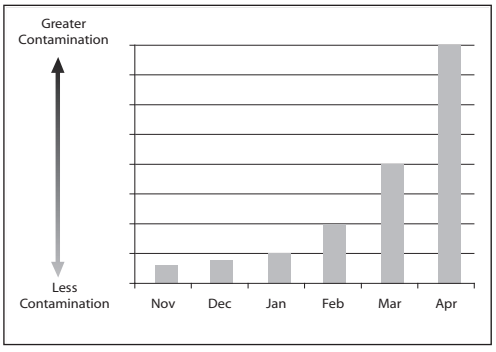
Dual or triple infection with more than one organism is common. They multiply as cows occupy the site for longer periods of time (Table 1). Organic matter accumulations create cool, damp conditions that enhance organism survival. Calving usually occurs as numbers peak.

Because cows may have experienced these organisms in the past or have been recently vaccinated against them, they can develop a degree of immunity, which they pass on to calves through colostrum. This transfer takes place when the calf nurses immediately after birth. It is vital that calves nurse 10 percent of their body weight in colostrum within the first 2 to 4 hours to ensure they receive maximum protection from their mothers. After a few days, calves gradually begin to develop their own immunity. Rates of depletion of passive immunity obtained from colostrum and the development of active immunity by the calf are shown in Table 2.

Depending on when calves are born and turned out onto summer pasture, disease resistance may be near its lowest point at the time organism count is at its highest. In this case, scours are almost sure to occur.

If the organism count (disease challenge) is low, it takes lower levels of resistance for the calf to be free of scours (Table 3). If the organism count is high, it may overwhelm even the most resistant calf (Table 4). Thus, one major key to scours prevention is to control the disease challenge level so it cannot overwhelm the calf's resistance.

Table 1. Build up of contamination and disease-causing organisms onsite as winter feeding progresses.



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Proper calving management can help ensure desired results. One obvious solution is to separate winter feeding sites and calving pastures. But this does not always solve scours problems because contaminants can build up rapidly even when the herd is moved from a winter feeding site to a separate pasture for calving.

The Sandhills Calving System, a new pasture management practice developed in Nebraska, has proven to reduce the incidence of scours regardless of the organism. Rather than using a single large calving pasture, this system divides large pastures into a series of smaller ones based on length of the calving season.

Pregnant cows are placed in the first of the smaller pastures. After early calving has progressed for 10 to 14 days, cows that have calved remain in the pasture with their calves, and cows that have not yet calved are moved to an adjacent small pasture. The relocated group is allowed to calve in the second pasture for the next 7 to 10 days. After that those that have calved are left in the pasture with their calves and those that have not calved are moved to the next small pasture. This is repeated throughout the calving season. The reduction in calf scour sickness and death loss has been remarkable with this system.

In planning next year's winter feeding and calving management program, keep two things in mind. First, producers can't buy management in a bottle or administer it through a syringe. Good management comes from understanding the science and devising and executing a plan to take advantage of it. The second lesson is that when it comes to calf scours, dilution is the solution to pollution. Anything to prevent build up of disease organisms enhances ability to reduce performance and death losses as well as medical expenses associated with treatment.

Table 2. Depletion of passive immunity and development of active immunity in the newborn calf

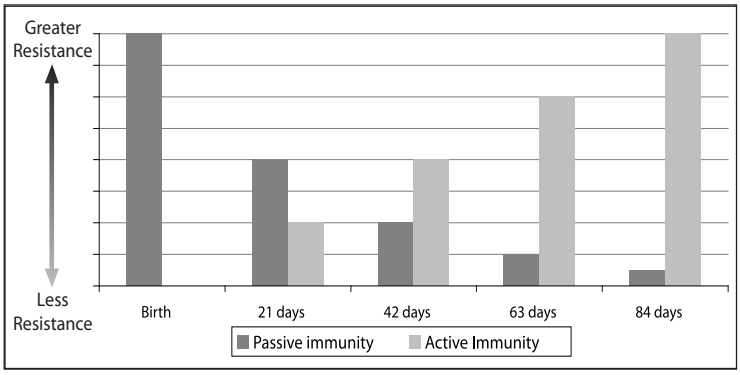


Table 3. High calf resistance level

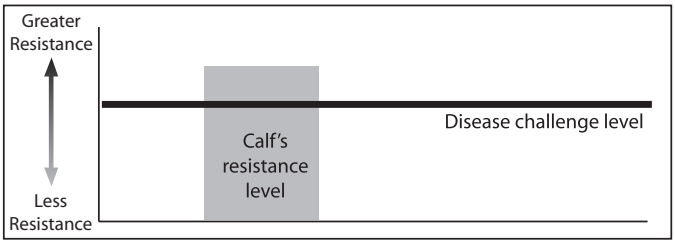
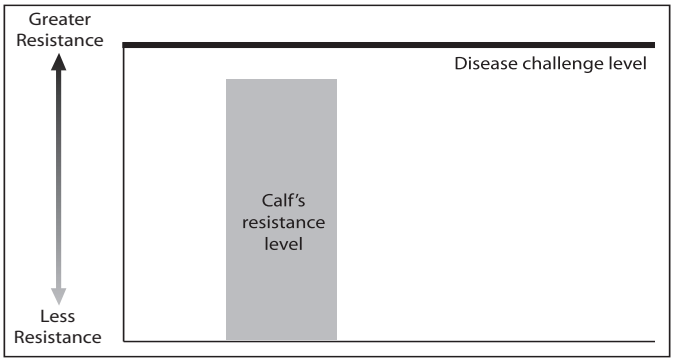


Table 4. High disease challenge level



References

1 D. A. Smith, et al., Prevention of Neonatal Calf Diarrhea with the Sandhills Calving System, University of Nebraska. Accessed June 7, 2006: http://vbms.unl.edu/extension/sandhills%20scours%20paper%20smith.pdf.

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MF-2753 November 2006