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Calf Note #46 - Delays in colostrum feeding - effects on bacterial load

Introduction

The importance of colostrum feeding cannot be understated. The first feeding of colostrum provides passive immunity to the calf. The importance of early feeding of colostrum to the young calf is critical to protecting the gut of the calf as well as providing immunoglobulins.

But there's another reason to feed colostrum early. Delayed colostrum feeding when the colostrum has been milked from the cow means that the bacteria and other pathogens in colostrum will be allowed to grow. Research conducted at the University of California, Davis (P. Jardon, personal communication) showed that when colostrum was left at room temperature for any period of time, the growth of bacteria in the colostrum was phenomenal. Within six hours, the number of bacteria in colostrum exceeded 10 million per milliliter. These bacteria can markedly affect the health of the calf.

Researchers at Virginia Tech introduced bacteria into the intestine of the calf and evaluated absorption of IgG in newborn calves. These workers (James et al., 1981) showed a reduction in the absorption of IgG during the first 24 hours of life. Apparently, these bacteria competed for binding sites with colostrum IgG. Alternatively, bacteria may be absorbed directly into the blood of the calf, resulting in septicemia. If you allow colostrum to sit at room temperatures for extended periods, you will increase the risk of infecting calves with disease-causing pathogens.

Colostrum and other milk products are excellent growth media for bacteria. Unless the cow calves with mastitis or other infection, there should be little microbial contamination of colostrum. Be sure to minimize the contamination after it is milked from the cow by using clean milk equipment and collect the colostrum into a clean receptacle. Consider pasteurizing colostrum that has been allowed to sit for more than about an hour.

Early feeding of colostrum is important. Don't delay in getting colostrum into the calf. If colostrum must be stored before feeding, be sure that it is stored cold or frozen. Don't allow colostrum to grow more bacteria than it has coming straight from the cow. Quickly refrigerating or freezing colostrum can help minimize the growth of bacteria.

References

1. James, R. E., C. E. Polan, and K. A. Cummins. 1981. Influence of administered indigenous microorganisms on uptake of I¹²⁵-g-globulin in vivo by intestinal segments of neonatal calves. *J. Dairy Sci.* 64:52.

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