

Preconditioning Lowered Treatment Costs In Calves Exposed To PI BVD



DR. JEREMY POWELL

LITTLE ROCK, ARK.

According to most research, the incidence of weaned calves being persistently infected (PI) with bovine viral diarrhea (BVD) is relatively low, at less than 1 percent. However, calves infected with PI BVD are a key source of exposure for others.

Other calves exposed to this disease may have secondary economic losses associated with increased treatment costs and decreased weight gains. Recent research conducted at the University of Arkansas¹ indicated that preconditioning lowered the treatment expenses of calves exposed to PI BVD during a 42-day receiving period compared to auction market calves.

The study evaluated 528 head of male calves from two different groups. One group included single-source, preconditioned calves that were weaned, vaccinated and dewormed 42 days prior to study initiation. The other group included commingled auction market calves acquired from multiple Arkansas auction markets. Calves were shipped to the University of Arkansas Agricultural Experiment Station located near Fayetteville. Upon arrival, the auction market calves were vaccinated and dewormed. The preconditioned and auction market calves were maintained in separate pens; however, half the calves in each group were placed into pens that contained a PI BVD-positive calf.

Results indicated a difference in the total antibiotic treatment cost for bovine respiratory disease. Antibiotic treatment cost was greatest for auction market calves exposed to PI BVD, averaging \$22.70 per head. Costs were intermediate for auction market calves not exposed to PI BVD, totaling \$18.02 per head. Furthermore, treatment costs were lowest for preconditioned calves, and costs did not statistically differ regardless if preconditioned calves were exposed to PI BVD or not, averaging \$3.19 and \$2.60 per head, respectively. Differences were also noted for the percentage of chronically ill animals. Auction market calves exposed to PI BVD had the greatest number of chronically ill calves at 7.6 percent, while auction market calves not exposed to PI BVD were intermediate at 1.1 percent, and preconditioned calves were both 0.4 percent regardless if exposure to PI BVD occurred or not.

Data collected from this study also verified the enormous benefits of preconditioning. Regardless of PI BVD exposure, morbidity rate for bovine respiratory disease was markedly greater for commingled auction market calves versus single-source preconditioned calves totaling 70 and 7 percent, respectively. Furthermore, a

greater number of auction market calves required treatment with a second and third antibiotic compared to preconditioned calves. Preconditioned calves also exhibited greater ADG than auction market calves throughout the 42-day period, averaging 2.6 vs. 1.9 pounds per day. These results clearly suggest that prior vaccination against respiratory pathogens coupled with pre-arrival management results in greater gain performance and lower morbidity rates during the receiving period.

A persistent infection with BVD occurs when the calf is infected in utero at less than 125 days of gestation. When the calf is born, the an-



Figure 1. An ear notch is being prepared for laboratory testing.

Photo provided by University of Nebraska

imal will carry the infection for the rest of its life, and it will shed the virus from its body, becoming a constant source of infection for other cattle. A persistently infected animal may appear normal, but it can be identified as infected using a diagnostic test. The current test method used is an "ear notch" tissue sample taken from a suspect animal. This tissue is sent to a diagnostic laboratory for testing. Your veterinarian can help you collect and submit samples for testing.

This study convincingly shows that preconditioning weaned calves improves animal well-being and reduces antibiotic usage with or without exposure to PI BVD. Taking advantage of preconditioning improves health of the cattle and makes good economic sense. For more information about cattle diseases, contact your local county Extension office. Δ

DR. JEREMY POWELL: Associate Professor/Animal Science, University of Arkansas

Acknowledgments

¹ Richeson, J.T., and E.B. Kegley. 2010. Pre-arrival management of newly received beef calves with or without exposure to a persistently infected bovine diarrhea virus type I calf affects health, performance, bovine viral diarrhea virus type I titers, and circulating leukocytes. Proceedings of 2010 ASAS Annual Meeting, Denver, CO.