

Three chronic calves were persistently infected with BVDV, yet they did not succumb to mucosal disease and eventually returned to their home pen. Some 72% of the calves entered the chronic pen with a medium-to-high reciprocal titer (36 - >324) for BVDV, indicating recent or ongoing exposure to the virus. Chronic calves with reciprocal titers to BVD of 36 or greater were 4.5 X more likely to have polyarthritis than calves with

reciprocal titers less than 36 ($p = 0.005$). Of calves entering the chronic pen, 78% had a high reciprocal titer (1280 - > 5120) for *Mycoplasma bovis*, indicating recent or ongoing exposure. Chronic calves with reciprocal titers of 1280 or more to *M. bovis* are 2.5X more likely to have polyarthritis than calves with a reciprocal titer less than 1280 to *M. bovis* ($p = 0.005$).

Beef Cow-calf Herd Biosecurity Practices

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Introduction

The literature contains little information on current biosecurity practices of beef cow-calf producers. The cow-calf industry is experiencing an increasingly global marketplace and increasing pressure to minimize antibiotic use and maximize food safety. In this climate, economical biosecurity programs may be an important component of an integrated production management program. Biosecurity programs may be efficiently integrated with Hazard Analysis Critical Control Point (HACCP)-like programs to control food quality and safety, and minimize antibiotic use. This analysis is based on a recent survey on the management and biosecurity practices of U.S. beef cow-calf producers. This analysis identifies current biosecurity practices of beef cow-calf producers, management adjustments to biosecurity risks, and opportunities for veterinary intervention to decrease herd disease risk and risk of quality and safety defects.

Materials and Methods

This analysis was based on the National Animal Health Monitoring System Beef '97 administered questionnaire. The questionnaire was administered to approximately 1200 producers in two phases between December 30, 1996, and February 3, 1997 and between March 3 and April 30, 1997. Questions cov-

ered management practices, importation of cattle, use of vaccines, testing of imported cattle, and potential for feed contamination.

Data were weighted to account for the initial sampling probability and any survey non-response in order to obtain unbiased population estimates. The stratification and clustering in the sample design was accounted for in estimating the variance for the population parameters. The likelihood-ratio χ^2 test was used to evaluate differences between population estimates of cross classified data on management practices. Odds ratios and 95% confidence intervals were calculated on cross-classified variables using weighted estimates to measure the association between risks and management practices.

Results and Conclusions

Producers commonly engage in management practices that increase risk of introducing disease, such as importing cattle, failing to quarantine imported animals, and communal grazing. Producers inconsistently adjust for increased risk of their management practices by increasing vaccination, quarantine, or testing rates. Cow-calf herds are at risk for disease exposure from outside sources, and producers do not always adjust management practices appropriately to minimize risk. Veterinary involvement in education of producers about biosecurity risks and development of rational and economical biosecurity plans is needed.