

Bovine Respiratory Disease (BRD) Complex

Bovine Respiratory Disease, commonly called “Shipping Fever”, is said to be the most costly disease affecting stocker and feedlot cattle. It is estimated that over \$3 billion is spent annually on prevention, treatment, and production losses for this disease. As the name implies, it is a multifactorial disease with multiple causes including viruses, bacteria, parasites, nutrition, environmental stressors, and host susceptibility. Although BRD can occur in any age and class of cattle, it is more common in young animals under stressful conditions and is the reason that stocker and feeder operations are most commonly affected.

The first signs of affected cattle usually involve reduction in appetite and lethargy. This may rapidly progress to a “drawn” appearance and animals that are slow to move and separated from the herd. Depression, drooped head and ears, nasal and ocular discharge, coughing, and labored breathing are also commonly observed signs with BRD.

Viruses commonly associated with BRD Complex are bovine herpesvirus-1 (BHV-1, IBR), bovine viral diarrhea virus (BVD), bovine respiratory syncytial virus (BRSV), parainfluenza-3 (PI-3), and bovine respiratory coronavirus (BRCV). Several bacteria are also associated with BRD Complex including *Mannheimia haemolytica* (formerly *Pasteurella haemolytica*), *Pasteurella multocida*, *Mycoplasma bovis*, *Histophilus somni*, and *Trueperella pyogenes*. The importance of bovine influenza virus D, adenoviruses, and *Bibersteinia trehalosi* on the development of BRD is currently under investigation.

As previously mentioned, environmental factors such as sanitation, ventilation, and overcrowding, and stress events such as weaning, transportation, vaccination, castration, and dehorning, also significantly increase the risk of developing BRD.

Diagnosis of BRD Complex is made by clinical signs, history, and laboratory testing. The Texas A&M Veterinary Medical Diagnostic Laboratory has a number of tests available to detect pathogens involved in BRD Complex in cattle. Samples from the respiratory tract can be cultured to identify bacterial pathogens and to determine sensitivity to antibiotics, while Polymerase Chain Reaction (PCR) testing methods can be used to quickly detect viral or bacterial BRD pathogens. Serological tests are also available to assess antibody levels to various BRD pathogens as an aid in diagnosis.

Veterinary diagnosticians at both the College Station and Canyon laboratories are happy to consult with producers and veterinarians about their specific situations and to assist in providing information regarding sampling and test submission and selection.

Reference:

Grooms, Daniel L., Bovine Respiratory Disease Complex (BRD), *Blackwell's Five-Minute Veterinary Consult: Ruminant*; Scott R.R. Haskell, DVM, editor. 2008 pgs. 140-141.