

Livestock Health Series

Bovine Respiratory Disease

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Introduction

Cattle producers know the disease as bovine respiratory disease (BRD), shipping fever or pneumonia. It cost the U.S. cattle industry over \$2 billion last year alone. These costs stem from medical and treatment expense, mortality and reduced performance in affected animals. This disease is the single biggest killer among newly weaned cattle, and several factors can play a role in causing this disease.

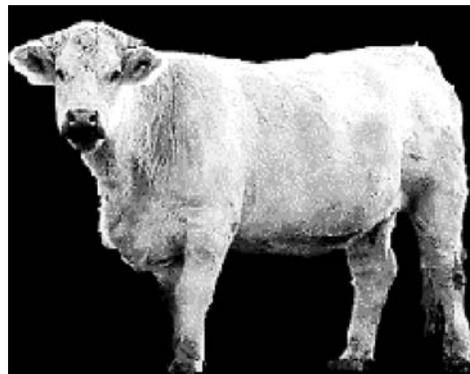
BRD is typically not due to a single cause but is usually caused by a combination of several factors, such as infectious viral and bacterial agents, as well as other factors that cause stress on the animal. Contributors to stress play a major role in morbidity rates associated with BRD. Stress can be due to many possible factors. Dust, transporting, weaning, handling, commingling with infected animals, overcrowding, dehorning, castrating and poor nutrition all add to the onset of this disease.

Viral agents also play a key role in initiating BRD. Typically, a viral cause is the primary or initial challenge to the respiratory tract. The most common viral agents that play a role in this disease are infectious bovine rhinotracheitis (IBR), bovine viral diarrhea (BVD), parainfluenza type 3 (PI3) and bovine respiratory syncytial virus (BRSV). Most animals that have a healthy immune system can successfully fight off a viral infection. However, cattle with immune suppression due to stressful factors can no longer hold these viral agents in check. They enter the respiratory tract and begin to impair the protective barriers of the normal trachea and lungs. With the protective barriers gone, bacterial agents are allowed to access and infect the respiratory tract.

Pasteurella haemolytica (recently renamed *Mannheimia haemolytica*), *Pasteurella multocida* and *Haemophilus somnus* are the bacterial agents most commonly identified in advanced cases of BRD.

Figure 1. Many factors play a role in this disease.

Infectious agents ►
Viral and
Bacterial
Pathogens



◀ Stress factors:
Transporting
Heat/Cold Stress
Poor Nutrition
Weaning
Handling
Dust
Overcrowding

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These bacteria flourish after an initial viral infection or stress factors have weakened the animal's immune system.

Clinical signs that are commonly associated with the disease are a rectal temperature of > 104°F, decreased appetite, lethargy, increased respiratory rate, coughing and increased ocular and nasal discharge. While listening with a stethoscope, one may hear crackles and wheezes in the

chest. During this time, cattle have severely decreased performance.

Early detection of clinical signs is important. Once signs are detected, antibiotic therapy should begin. Control and prevention should focus on vaccination and decreasing the number of stress factors associated with this disease. For more information about cattle diseases, contact your local county Extension office.

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