

Bovine Respiratory Disease “Shipping Fever” in Cattle Ram Kasimanickam



Bovine respiratory disease (BRD) is the most common and costliest problem encountered in stocker or feedlot calves. BRD, also called “shipping fever”, causes major economic losses to the producer by reducing average daily gain, feed efficiency, and overall performance of beef calves.

BRD is a respiratory disease complex that occurs most often within 4 weeks after weaning. The weaning process is a stressful time for calves. At that time, calves are handled, commingled, and shipped to other locations. During this period, calves may be exposed to many infectious agents that cause BRD. Stress impacts the immune system of calves by making them more vulnerable to BRD. In addition, poor body condition, and transport through sale yards and over long distances will increase risk to BRD. On arrival to the backgrounder or feedlot, calves may be dehydrated, tired from the travel, lose their appetite, and some might even be in the early stages of BRD. As a result, it is possible for calves to develop severe bronchopneumonia and even die from “shipping fever”.

Infectious Agents: There are many types of infectious agents involved. The most common viruses involved with BRD include Bovine Viral Diarrhea (BVD), Infectious Bovine Rhinotracheitis (IBR), Bovine Respiratory Syncytial Virus (BRSV), and Parainfluenza Type-3 Virus (PI-3). Exposure to these viruses can cause severe damage to the respiratory tract of calves creating opportunities for bacteria to then settle in the lungs. Fortunately, many of these agents can be prevented through vaccination programs. The most common bacteria found in the lungs of calves with BRD include *Mannheimia haemolytica* and *Pasteurella multocida*. *Haemophilus somnus* may also be involved in cases of pneumonia and can cause severe damage to the heart muscles. Vaccines are also available for these bacteria. Another bacterial-type organism that is being found more often in the past few years is *Mycoplasma bovis*. This organism not only causes severe pneumonia but also swollen, painful joints in calves. Unfortunately, there is not an effective vaccine or treatment available. It is also possible to find sick calves that have *Mycoplasma bovis* or are persistently infected (PI) with BVD.

Clinical Signs: Symptoms of BRD usually develop within 4 weeks after weaning/marketing. Clinical signs can be variable since there may be one or more viruses and bacteria involved in this disease complex. Early clinical signs usually include: depression, loss of appetite, and dull eyes. These calves should be pulled from their group and checked for fever. Temperatures over 104 degrees F indicate early signs of BRD. Clinical signs later in the course of the disease include: rapid/labored breathing, droopy ears, coughing, diarrhea, staggering, nasal discharge or sudden death. Because the onset of BRD should be expected after weaning/marketing, producers should closely monitor every calf twice daily for the first few weeks. Left untreated, calves with severe BRD will die from their pneumonia.

Treatment Options: Early recognition and treatment of calves with BRD usually improves their outcome and overall performance. Treatment options can vary but most involve use of antibiotics specifically designed to treat calves with pneumonia. Most producers now use antibiotics which are effective against the bacteria most commonly found in the lung tissue. There are new generations of antibiotics which combine effectiveness with less frequent treatments. All of these antibiotics offer subcutaneous dosing and are usually effective against the organisms that cause BRD. Some of these have short slaughter withdrawal periods or no withdrawal periods at all. In addition, administration of an anti-inflammatory drug helps reduce fever and damage to the lungs, and may help sick calves get back on feed sooner. Providing calves with 1 gallon of warm water and electrolytes per 100 lbs. of body weight causes a stimulation of appetite and corrects the dehydration a calf usually suffers if sick for more than 24 hours. Vitamin B and Probiotics can also be used to help stimulate appetite. Response to therapy is usually observed within 24 hours and a successful outcome is closely related to early recognition of BRD clinical signs.

Diagnosis of BRD is usually made by clinical signs and response to treatment. However, necropsy is recommended on all dead calves to confirm the diagnosis of BRD and to find out which viruses and bacteria are involved. Necropsy can also provide answers on the nutritional status of the calf and which antibiotics might be most appropriate for treatment.

Prevention Strategies: Prevention of BRD requires advanced planning and careful attention to herd health management. The risks of BRD can be reduced by the following steps.

- Good nutrition before weaning,
- Reducing stresses related to handling and shipping,
- Purchasing source-verified cattle from herds with a known health history,
- Vaccinating calves pre-weaning followed by booster vaccinations at weaning,
- At processing, all calves should be properly vaccinated for BRD, ear tagged, weighed, and dewormed,
- Castrating and weaning calves and giving them time to acclimate to eating from a bunk prior to shipment is also a good idea, and
- Any calves that appear sick or have a fever should be treated during processing.

Mass medication (metaphylaxis) with long acting antibiotics given to all calves on arrival, is another prevention strategy that is common. Extensive research has indicated that the number of BRD cases in treated calves, on arrival, is greatly reduced. Treated calves will have improved average daily gain, feed efficiency, and overall performance. These factors support the use of metaphylaxis and have proven to be cost effective.

Some factors to consider when deciding to mass medicate are:

- Source of the calves as well as that of your own farm should be considered.
- Calves are more likely to get sick in the fall than any other time of the year.

- Inclement weather probably plays the single largest role in the likelihood of a large number of calves becoming sick.
- Calves that are not weaned when marketed are much more likely to get sick.
- Calves weighing < 450 lbs are more likely to get sick.
- Calves castrated after marketing are more likely to contract BRD.

Bovine Respiratory Disease is an economically important disease! Consult your veterinarians for effective vaccination strategies and for management and treatment options. Your veterinarians will consider age and source of the animal, the type of stress the animal will tolerate, laboratory antibiotic sensitivities for isolated bacterial pathogens, the withdrawal time so that no violative residues will be found and most importantly available for the follow-up. Cattlemen must understand it is a violation of federal law to use antibiotics other than as directed on the label unless prescribed by a veterinarian.

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