

Bovine Respiratory Disease
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Disease of the respiratory tract is a major problem for cattle that continues to cause serious economic losses for producers. Bovine respiratory disease (BRD) causes increased death loss as well as medication costs, labor, and lost production. Many different infectious agents may cause similar clinical signs.

The respiratory diseases of cattle can be divided into three main categories, upper respiratory tract infections, infections of the larynx and lower respiratory tract infections.

Upper respiratory tract infections cause inflammation of the nostrils, throat, and trachea. The clinical signs are usually mild and involve coughing, nasal discharge, fever and a decreased appetite.

Diphtheria is an infection of the larynx and may occur alone or along with other respiratory infections. There are often loud noises during breathing, and the swollen larynx may severely restrict air flow, causing death.

Lower respiratory tract infections or pneumonia, is an infection of the lungs and is often due to an extension of infection from the upper respiratory tract or a failure of the mechanisms designed to protect the lungs. This is much more serious and causes more severe signs than does an upper respiratory infection.

The causes of BRD are multiple and complex, but the three factors of stress, viral infection, and bacterial infection are almost always involved in cases of severe disease. Many normal cattle carry one or more of the bacterial and viral agents in their upper respiratory system with no ill effects. These may occasionally enter the lungs but are usually expelled or inactivated and clinical signs or infection of the lungs does not develop. However under stress the animal's defense mechanisms may be overcome and an infection established resulting in BRD. The mixing of cattle from different sources and wide environmental temperature changes have been identified as major factors in the initiation of disease outbreaks.

The most common signs of BRD are nasal and eye discharges, coughing, fever, depressed appetite, varying degrees of breathing difficulty and noise, rapid breathing, droopy ears, and open mouthed breathing. These vary greatly depending on the stage and extent of the disease process.

Treatment of BRD involves using antibiotics and sulfa which are efficacious against the bacterial component causing the infections. There are no drugs which are approved for use in cattle effective against the viral agents. Treatment of BRD will be effective and death loss minimal if the following principles are practiced. (1) Detect disease early so those ill can be treated and separated to a sick pen. (2) Initiate an effective treatment program promptly. (3) Provide good nursing care including cautious handling of both the ill and exposed cattle. Cattle with a majority of their lung tissue damaged before treatment is initiated will have a poorer response, more relapses and a higher mortality rate.

Two areas to assist in preventing BRD are to focus on management and vaccination. A producer should look at all possible causes of stress on the cattle and determine which ones can be reasonably eliminated or reduced. Look at alternate

methods of operation and the timing of processing and vaccine administration. Recognize that the critical periods of BRD development is the time associated with weaning, calves being shipped, placed on feed and mixed with different cattle. Preconditioning of calves will assist in a reduction of the incidence of BRD in weaned calves. Each producer must evaluate the benefits associated with preconditioning their calves to determine if preconditioning is applicable in their herd.

Vaccines are available for six respiratory disease causing agents. Infectious Bovine Rhinotracheitis (IBR) a viral agent of the upper respiratory tract. Parainfluenza-3 a viral agent that causes mild disease by itself, but can be a severe problem when combined with a bacterial agent. Bovine Virus Diarrhea (BVD), a common viral agent found in many herds and is associated with several disease processes including respiratory disease and immuno suppression. Bovine respiratory syncytial virus (BRSV) a respiratory tract pathogen commonly associated with weaned and feedlot calves. Pasteurella a bacteria carried by many normal cattle, it becomes a major cause of BRD when stressed calves are exposed to a viral agent. Histophilus somnus, a bacterial agent involved with BRD, neurological disease and lameness in beef cattle.

With the various brand names and antigen combinations available the choice of which vaccines to utilize and when becomes complicated. The veterinarian responsible for a producers herd health program can be very valuable when developing a vaccination program.