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Acute Pulmonary Emphysema

COW ASTHMA

Pulmonary emphysema or cow asthma is a severe disease affecting the lungs of cattle. Known also as fog fever, lung disease, bovine or summer asthma and panthers, the disease has been found throughout the world in most breeds of cattle, particularly Herefords, Jerseys and Guernseys. Adults over 2 years of age are affected more frequently than younger animals.

The disease usually occurs during the late summer or fall. In the western range states, emphysema in beef cattle is often related to management and change in diet, appearing within 10 days after cattle are moved from dry rangeland to improved or irrigated pastures.

The condition can be traced to lush, rapid growth of forage plants, rather than particular plant species. The rapidly growing plants contain unusually large quantities of a normal amino acid called tryptophane. The change in feed from dry range to lush pasture produces unstable conditions in the rumen and decreases the ability of the animal's system to metabolize the excess quantities of tryptophane consumed. At the same time, the rapid feed change also produces conditions favorable to an abnormal growth of clostridial organisms in the rumen. These organisms help convert tryptophane to a substance called 3-methylindole (3-MI). And when large quantities of 3-MI are absorbed into the blood stream, pulmonary emphysema may result.

The disease may develop from causes other than feed changes, including pre-existing pneumonia, allergic reactions to lungworm larvae or inhaled fungal organisms and inhalation of irritating gases. It may also occur at any time of the year, depending on climatic factors and other conditions. However, fewer cases are found after the first fall frost.

CLINICAL SIGNS OF THE DISEASE

Pulmonary emphysema causes an accumulation of fluids and entrapment of air in the lungs of affected cattle. As the air passages fill with fluid, air becomes entrapped within the lungs, breathing becomes difficult and the normal oxygen exchange function of the lungs is severely restricted.

In severe cases, clinical signs include panting and difficulty in exhaling air from the lungs, frequent coughing, excessive salivation, reluctance to move about, extreme weakness from mild exercise and rapid loss of condition. Death may occur within a few hours after onset of the disease.

Identification of pulmonary emphysema should be made by a veterinarian since a number of other diseases have similar symptoms, including pneumonia, lungworm infestation, severe and general infections and rumen bloat. Diagnosis usually involves a look at herd history, especially sudden feed changes, and clinical signs, plus examination of affected animals.

TREATMENT AND PREVENTION

No specific medications are now available to treat pulmonary emphysema or to inactivate the toxic 3-MI. Some treatments are commonly used to relieve symptoms of the disease, but these are not always successful. Actually, using the restraints necessary to treat affected animals can be hazardous since they already have difficulty breathing and may die suddenly from any exertion.

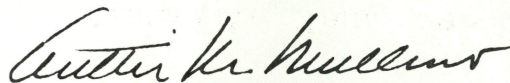
General recommendations for treatment are to handle affected cattle carefully and:

1. Remove them from the lush pasture and place them on hay.
2. Inject antihistamines, steroids and other compounds to help relieve the respiratory distress.
3. Use antibiotics and sulfonamides to prevent secondary bacterial infections.

Measures that will help prevent pulmonary emphysema include:

1. Remove cattle from summer range before the feed becomes too dry.
2. Make an easy transition from summer range by placing the cattle in drylot and feeding them hay while gradually getting them accustomed to the lush pasture.
3. Continue to feed hay or straw while the cattle are on pasture.

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