

Lung Fever

This cattle illness is nothing to cough at.

by Heather Smith Thomas

When pastures get dry in late summer and cattle are brought home from summer ranges to lush green meadows, conditions become ideal for causing Bovine Pulmonary Edema, otherwise known as emphysema. This problem has also been called lung fever, fog fever, bovine asthma, acute alveolar emphysema, and atypical interstitial pneumonia. Affected cattle are often called "lungers" or "panthers."

This severe respiratory problem hits cattle suddenly when changing from dry grass to lush green grass. In the western United States it is most common when cattle come off dry ranges in the fall and are put into irrigated fields or pastures.

The problem is caused by an allergic reaction in the lung. There is a sudden filling of the lungs that decreases their capacity. This usually occurs a few days after the change in feed. Emphysema isn't infectious or contagious. It is an individual animal's reaction to the feed change. In most cases, the animals will respond, if treated early enough, to antihistamines and adrenaline or cortisone.

The culprit is an amino acid called tryptophan, which is found in the lush, green forage of pasture plants when they are green and growing. Under certain conditions, this amino acid, after being eaten and digested, may be transformed by the gut bacteria into a poison. The toxins thus created are absorbed by the bloodstream from the digestive tract and carried to the lungs, where the reaction takes place — causing an asthmatic condition with extreme constriction of the bronchial passages, trapping tiny bubbles of air in the lungs. The trapped air bubbles soon join together to become larger bubbles, leaving less lung room to be used for oxygen-carbon dioxide exchange. The animal's demand for oxygen soon exceeds the supply.

The affected cow begins to have trouble breathing and starts to pant in an effort to get enough oxygen. She may have a shallow, grunting cough, or make wheezing sounds as she

breathes. The mouth is usually kept open and the tongue may protrude as the cow pants. Her nose may seem blue as tissues become short on oxygen.

When she reaches this point she is in critical danger. If the cow continues to eat the green feed, she will die. The best chance of saving her is to try to gently move her back to the old pasture or to a pen or corral where she can be doctored and fed hay. Affected cattle have severe respiratory distress and even a slight exertion may cause them to suffocate. Sometimes the best thing to do with a serious case is to just leave the animal alone. Then try to get a shot of antihistamine and cortisone into her.

If the cow does survive the attack, it is usually safe, after two weeks, to return her to the original pasture where she was affected. The cows system will readjust after that period of time.

The symptoms of emphysema usually come on very swiftly. Unless the herd is being checked often, the first indication of trouble may be finding a dead cow. Calves are almost never affected by this type of emphysema.

The most obvious sign is labored breathing, often with grunting sounds. The animal may try to breathe through its mouth and may froth and drool saliva. A cow with emphysema, except for those with respiratory distress, will seem more bright and perky than those with pneumonia. This occurs because there is no apparent toxemia or high fever. The animal may still try to eat and drink.

The cow may stand with her head and neck stretched forward, mouth open, with very rapid, shallow breathing. The heart rate rises because of the shortage of oxygen and may be as high as 150 beats per minute. If heart rate is over 120, the animal is probably in the final stages of the illness and won't last much longer. Death may occur within 12 hours from the beginning of symptoms, or the animal may linger until the second or third day. Mild cases will recover on their own. Some chronic cases linger for weeks or months, with periods of partial recovery and then relapse.

In 1978, scientists at Washington State University found emphysema could be halted in experimental animals by using the antibiotic monensin (the main ingredient in the feed additive Rumensin). But it is only effective if given to cattle before symptoms appear. If given at the time of pasture change, monensin can prevent the bacteria from changing the amino acid into allergy-producing toxins, preventing the problem. There is still, however, no effective way to get the drug into the cattle before they eat dangerous levels of the amino acid.

It's usually not practical to give the drug to each animal individually, since the dosage must continue daily for seven to 10 days after the pasture change. Emphysema hits five to 12 days after the pasture change. Experiments are continuing with use of monensin in medicated salt or protein blocks, but there is still no way to make sure the cattle eat the right amount each day.

Producers can avoid the problems, in most instances, by not putting cattle into lush, green pastures directly from dry ones. A transitional period on a moderately green pasture or on hay will help. When the cattle are put on the green pasture, care should be taken not to exert or excite them during the first two weeks. Any cow that comes down with this illness should be treated by a veterinarian. A few cases aren't caused by green pasture but by an allergic reaction to dusty feeds or hay.

A high incidence of emphysema in a herd can be devastating. Prevention is a lot easier than treating them. Careful management of pastures and feed is about the best way to prevent this trouble. When cattle are moved to greener pastures from dry ones, they should be checked closely, preferably twice a day for the first two weeks. Dry years or dry conditions in late summer often result in more cases. Producers should keep this in mind when changing pastures or preparing to bring cattle off rangeland and into irrigated meadows.

