



# Infectious Bovine Rhinotracheitis

Edited by L.R. Sprott and Steve Wikse\*

**I**nfectious bovine rhinotracheitis (IBR) was originally recognized as a respiratory disease of feeder cattle in the western United States. Later, IBR became recognized as a complex of disease syndromes occurring throughout the United States and over the other major cattle-producing areas of the world.

Cattle and some wild ruminants (cud-chewing animals) are the only known hosts. IBR is also known as red nose and IPV (infectious pustular vulvovaginitis).

Knowing symptoms and prevention measures can help producers minimize losses from IBR.

## Symptoms

Several symptoms are associated with IBR, including a respiratory syndrome, infectious pustular vulvovaginitis, abortion, pinkeye and postmortem lesions.

## Respiratory syndrome

Respiratory symptoms were the first signs reported for this disease. The animal has difficulty inhaling, breathes rapidly,

has a profuse watery nasal discharge becoming thicker and darker as the infection progresses, and stands with its head and neck extended. Depression, higher body temperature (104 to 108 degrees F) and decreased appetite accompany the respiratory signs.

As the infection progresses, the animal's nostrils become encrusted, it loses weight rapidly and may have diarrhea. If the crusts on the nostrils are rubbed off, the underlying tissue appears very red and inflamed, hence the term "red nose."

The respiratory form of the disease usually affects concentrated groups of cattle, such as in feedlots. The IBR virus is one of the most common agents involved in shipping fever pneumonia of feedlot calves. Keeping many cattle in close contact provides an ideal situation for the virus to spread rapidly. As the virus passes from animal to animal, its ability to produce disease increases.

The first signs of the disease appear about a week after infection. Usually, several animals become sick about a week before a large number of animals show signs of illness. Fifteen to 100 percent of the herd may become ill, with a death rate of 0 to 5 percent of those affected. The respiratory form of this disease

is the most frequently observed form under feedlot conditions.

## Infectious pustular vulvovaginitis (IPV)

Cattle exhibiting the vulvovaginitis form of the IBR complex are sexually mature females that do not appear ill. Signs of IPV include a thick yellow to brown vulvar discharge that attaches to the vulvar tuft of hair. The vulva is swollen and the vulvar and vaginal lining is reddened, dying and/or contains small whitish-colored pustules. The vaginal-vulvar infection causes irritation, exhibited by frequent tail-switching and urination. Temporary infertility accompanies this infection.

Lesions similar to those from IPV may appear on the bull's penis and prepuce (foreskin). This infection is believed to result from coitus with an IPV-infected female. The libido of infected males is usually decreased temporarily. The condition is known as *balanoposthitis*.

## Abortion

The IBR virus is one of the most common causes of bovine abortion. Possible sources of the virus include new additions (shedders) to the herd, vaccines, birds or wild ruminants. Often this abortion is preceded by a mild respiratory and/or eye

\*Professor and Extension Beef Cattle Specialist; Associate Professor and Food Animal Veterinarian; The Texas A&M University System.

infection (pinkeye), although abortion occurs without observed signs of illness. The aborted fetus has no consistent gross characteristic lesions.

Abortion may occur at any stage of the gestation period, but is usually noticed in the second half of gestation. Death and absorption of the fetus may occur in early pregnancy and may be assumed to be an infertility problem.

Beef and dairy cattle may be affected, with up to 75 percent of the herd aborting. Abortion has been reported in herds two successive years, possibly indicating that recovery does not produce complete immunity. Abortions have also been reported occasionally in herds where a program of IBR vaccination has been practiced for up to several years before the onset of abortions. After aborting, the animal apparently has no injury to its reproductive tract; normal pregnancy may follow.

Abortions may also be produced by vaccinating pregnant cattle with certain types of modified live IBR virus vaccine. Other types are labeled for use in pregnant cows or in calves nursing pregnant cows. Be sure to read label directions.

Calves may be born infected with the IBR virus. Infection is exhibited as enteritis, weak calves that have difficulty nursing, or as a respiratory problem.

### **Pinkeye (keratoconjunctivitis)**

The pinkeye form of IBR may accompany or precede the respiratory or abortion form of this disease. The signs are reddened, swollen mucous around the eyes and a clear, watery secretion draining over the hair below the eye. The secretions cause the hair to mat and collect dirt and other debris. As the condition progresses, the secretions become thicker and darker. This condition is sometimes called "winter pinkeye" and is differentiated from classic pinkeye caused by the bacterium *Moraxella bovis* by lack of a central corneal ulcer.

Another condition observed in young cattle with the IBR virus is encephalitis. This nervous system infection may look like the nervous form of listeriosis.

### **Postmortem lesions**

Diseased cattle that have died usually have hemorrhages or a mucofibrinous exudate over the sinuses. A tracheitis is usually present with hemorrhages and a hyperemia. These lesions may extend into the bronchi.

Because cattle often have dual infections, typical lesions are seldom observed, and differentiating between shipping fever, mucosal disease or malignant catarrhal fever requires laboratory examination for confirmation.

### **Preventing IBR and IPV**

Producers should take measures to prevent IBR and IPV:

- Have a veterinarian examine all new additions to an established herd and obtain a health certificate indicating that they were disease-free at purchase.
- Isolate all new additions for at least 30 days and have a veterinarian reexamine them before having contact with the established herd.
- Isolate all diseased animals immediately upon detection. This helps prevent contact and spread of the infection.
- Vaccinate cattle. Numerous IBR vaccines are readily available. Use them only as the instructions on the label indicate.

### **Treatment**

No medicines are available to treat the IBR viral infection. Secondary infections may be controlled by using antibiotics and sulfonamides through veterinary prescription.

---

This information was prepared for the Great Plains Beef Cattle Handbook by I.A. Schipper, D.V.M., Professor of Veterinary Science, North Dakota State University. Appreciation for editorial comments is extended to Dr. Steve Wikse, College of Veterinary Medicine, Texas A&M University.

Produced by Agricultural Communications, The Texas A&M University System

*Educational programs of the Texas Agricultural Extension Service are open to all people without regard to race, color, sex, disability, religion, age or national origin.*

Issued in furtherance of Cooperative Extension Work in Agriculture and Home Economics, Acts of Congress of May 8, 1914, as amended, and June 30, 1914, in cooperation with the United States Department of Agriculture. Chester P. Fehlis, Deputy Director, Texas Agricultural Extension Service, The Texas A&M University System.

5,000 copies, New

VM, AS-1