

# Infectious Bovine Rhinotracheitis

by

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## HISTORY

Infectious Bovine Rhinotracheitis (IBR), also called Necrotic Rhinitis, Red Nose, and Dust Pneumonia, has been a major feedlot problem for more than a decade. The disease was first reported from Los Angeles county, California in 1954 by Schroeder and Mays (5). Miller (1955) observed the disease in Colorado and described it at this time as an acute respiratory condition characterized by high fever and a severe dyspnea resulting from abundant mucopurulent nasal and tracheal secretions (4). The principal gross lesions observed are inflammation and congestion of the external and internal nares and a mild to severe hemorrhagic tracheitis. Other lesions that appear from time to time are: a mild to severe conjunctivitis with hyperplasia of the lymphoid tissue of the third eyelid to the point where the third eyelid can be seen to extend half the way across the palpebral orifice, a pustular vulvo-vaginitis,

and recently (in Hungary) an encephalitic condition in calves has been associated with the IBR virus (1). The severe reddening of the nasal mucous membrane has resulted in the descriptive name of "Red Nose".



Typical eye lesions of IBR. Note edema of eyelid, conjunctivitis, copious lacrimation (inflammatory changes).

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Early suspicions concerning the viral etiology were confirmed in 1956 by Madin, York and McKercher when they isolated and grew the virus in tissue culture (3).

This report describes an outbreak at the Iowa State University Beef Nutrition Farm at Ames, Iowa where the conjunctivitis and lymphoid hyperplasia of the third eyelid seemed to be the primary lesions.

### CASE REPORT

On 5 December 1964, Iowa State University Ambulatory Clinic was called out to the Beef Nutrition Farm to examine a sick calf. The calf, (No. 1) an angus steer of approximately 450 lbs., was off feed, quite depressed, and showed symptoms of difficult breathing. The calf had a temperature of 106° F. and exhibited a severe conjunctivitis and lymphoid hyperplasia of the third eyelid with a bilateral mucopurulent ocular discharge. Harsh tracheal sounds were heard with a stethoscope. The animal was treated with neomycin and prednisilone.

On 7 December, a repeat call was made. Three more calves, in the same pen as calf No. 1, exhibited symptoms of a conjunctivitis and lymphoid hyperplasia of the third eyelid. The temperature of these three animals ranged from 104°–106° F., and ulcerations on the tongue and nostrils were seen in two of the three animals. All three animals received neomycin and prednisilone for treatment. Calf No. 1 showed no response to therapy. It was decided at this time that the disease was IBR, and a decision was made to vaccinate the remaining animals. Seventy-six 400 lb. calves and eighteen 900 lb. yearlings received the vaccine. One-half of thirty-six 950 lb. Holstein steers were vaccinated. These were in pens of six each and every other pen was immunized.

On 8 December, calf No. 1 still carried a high temperature. The eye lesions appeared more severe at this time. Calves 2, 3 and 4 showed no improvement. A deep barking cough was noticed in a few of the other animals in various pens. Other animals showed evidence of a conjunctivitis, protrusion of the third eyelid and a severe ocular discharge.

On 9 December, the temperature of calf No. 1 dropped to 104° F. and remained here until the 14th of December regardless of treatment used. The remaining three sick animals showed no improvement until the 15th of December.

On 13 December, Dr. Gratzek of the Veterinary Hygiene Department took eye and nasal swabs of the four sick calves, and eventually isolated the IBR virus.

On 19 December, all four animals were greatly improved and no other animals appeared to be showing clinical symptoms.

The results of vaccination were not clear cut since none of the animals came down with severe clinical symptoms after vaccination.

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### REFERENCES

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3. Madin, S. H., York, C. J., and McKercher, D. G.: Isolation of infectious bovine rhinotracheitis virus. *Science*, 124:721. 1956.
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5. Schroeder, R. J., and Mays, M. D.: An acute upper respiratory infection of dairy cattle. *JAVMA* 125:471. 1954.

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### *Effects of Parasympathetic Drugs on Rumen Activity*—B. R. Havick

Parasympathomimetics are given to alleviate rumen stasis, because of their stimulating effect on motor neurons of the rumen musculature. Other effects of drugs of this class would be noted in addition to rumen stimulation. Contraindications would include pneumonia, weak heart conditions, and possibly pregnancy. The drug of choice is probably neostigmine. Carbachol has also received favorable report, but there have been conflicting views. Neostigmine has more restricted action on the rumen; the suggested dose is 2.5 mg/100 lb. The drug may be more expensive than physostigmine, which is equally as effective but has more widespread effects. The dose is  $\frac{3}{4}$  grain/ adult cow; the duration of effect is about 2 hours.