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Pink Eye

(Infectious Keratoconjunctivitis)

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Infectious Keratoconjunctivitis is a contagious disease of cattle, both beef or dairy, and sheep. It is most often observed in cattle under one year of age in breeds having white faces or white pigment about the eyes. It is primarily a problem during summer and fall or during periods when cattle are exposed to heat, dust, sunlight, flies and other insects. However, this condition is observed in any season and in all breeds of cattle.

The term keratitis indicates an inflammation of the cornea or outer portion of eyeball (the part of the eye we see). Keratoconjunctivitis is an inflammation of the conjunctiva or covering of the white part of the eye. When both the cornea and conjunctiva are infected and/or inflamed, the condition is referred to as keratoconjunctivitis or more commonly pink eye.

Well-conditioned cattle appear as susceptible as poorly conditioned cattle. Keratoconjunctivitis is more prevalent in some years than other, even though cattle are kept in the same environment.

Bacterial Pink Eye

A bacterial organism Hemophilus bovis is frequently associated with pink eye. However, numerous organisms common to the bovine environment have been isolated from involved eyes.

Though keratoconjunctivitis is an infectious disease, predisposing factors other than microorganisms are important causative agents. These predisposing factors include (1) allergies to weeds, grain dusts,

pollens, or other substances; (2) injuries from horns, protruding objects in the yard or housing areas such as nails, wires, broken boards, and (3) foreign objects in the eyes such as oat hulls or barley awns, and ringworm on the eyelid. Flies, dust and irritation from exposure to sunlight are also contributing causes of this infection.

Animals with white faces or white pigment about the eyes are considerably more prone to infectious keratitis than dark pigmented animals. The frequency of the ailment is also greater with cattle exposed to increased annual hours of sunshine.

Animals subjected to pink eye appear to have a greater susceptibility to cancer eye.

How Infectious Keratoconjunctivitis Is Spread

Infectious keratoconjunctivitis is spread by direct contact, dust, tail switching and insects. Cattle that come into close contact with each other, such as rubbing of heads when eating, drinking, hauling or crowding in the corral, may spread the organism. Though these are frequently referred to as means of transmission, they do not account for outbreaks in stanchioned cattle during winter months.

The infectious agents of pink eye are present in the profuse lacrimal secretions (tears) of the infected eye. Crowding at water sources or feed bunks or the presence of face flies can serve as a means of spreading infected tears to eyes of susceptible cattle.

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An eye involvement in horses that will cause blindness is known as periodic ophthalmia, often referred to as "moon blindness". The leptospiriosis organism is frequently isolated from the involved eye. The specific relationship of the leptospira and eye involvement in horses is not clear, as experimental infection causes systemic symptoms of leptospiriosis but no eye lesions.

Virus Pink Eye

Numerous viruses have been associated with pink eye, but the major one reported is the IBR virus. Animals having demonstrable blood titers to the IBR virus will still become infected with the IBR virus, so vaccination is of no demonstrable benefit. Antibiotics and sulfonamides are of no therapeutic value in controlling the IBR virus but will aid in the control of secondary invaders.

Symptoms

Infectious keratitis begins suddenly and will spread rapidly through the entire herd or flock. The primary symptom is profuse flowing of tears, followed by a cloudy or milky appearance of the cornea of the eye. Inflammation appears as redness on the white portion of the eye and its lids. The involved animal will usually avoid bright sunlight. If the infection continues, the cloudy condition becomes more pronounced, ulceration may appear, and the lacrimal secretions contain pus and are thick and yellow.

Complete blindness causes impaired milk production of the female or impaired breeding activity of the range bull. Weight loss may be extensive in range cattle as water and forage cannot be found. Because of its location, the infection may spread easily to the brain. The infection may also become generalized (septicemia) and cause death of the animal. Permanent blindness occurs in about 2 per cent of the involved animals.

In the early stages, other diseases may appear similar to infectious keratitis. These include malignant head catarrh, mucosal disease, IBR and iodism from over medication of iodine.

Preventing Infectious Keratitis

Recovered animals often remain carriers for indefinite periods. The carrier animals complicate the

prevention as there is no method of detection. Vaccines (bacterins) for infectious keratitis are available but their value as a preventive is questionable.

When an outbreak occurs, the administration of vaccines may be helpful as a treatment of active cases and as a preventive for cattle not showing symptoms. The same effect may be obtained with the use of sterile evaporated milk or bovine anti-serum administered intramuscularly. In some instances, vaccination with IBR vaccine may help. Use extreme care with IBR vaccine as it will cause abortion in vaccinated pregnant animals or in pregnant animals having contact with recent vaccinated animals.

To prevent the spread of infectious keratitis in the herd, all animals showing symptoms should be isolated from the well animals. Keep the infected animal out of sunlight, wind and dust, and protect the animal from mosquitoes, flies and other insects. Water and feed should be readily available at all times.

Some animals appear to have a natural resistance to infectious keratitis which can be accounted for to some degree by darker pigment about the eyes or having recovered from a mild infection. It has been demonstrated repeatedly that animals recovering from infectious keratitis have an immunity that is highly protective against future infection, for at least several months.

Some operators paint a 6 inch band below the eye with horn paint and/or fly repellents. This practice prevents irritation due to sunlight, and discourages flies and other insects from contacting the area. Painting has helped in preventing the disease and its spread by flies.

The face fly is rapidly becoming a problem in North Dakota and can transmit infectious keratitis. Control of face flies will definitely aid in the prevention of pink eye.

The proximity of animals is definitely a contributing factor to the incidence of pink eye as it is a highly contagious disease.

Genetic aspects that have been investigated indicate that family lines having white skin or pigment about the eyes are more susceptible to pink eye.

Providing high levels of Vitamin A in the feed or intramuscularly may be helpful in preventing pink eye in the symptomless animals in an involved herd.

Treatment of Infectious Keratitis

Medication is difficult because there is no one specific causative organism, thus no specific medication. The constant bathing of the eye with lacrimal fluids (tears) prevents the maintenance of medicaments in or on the eye. Another obstacle to medication is the cost of individual attention and restraint for medication.

The first step in medication should always be examination of the involved eyes for the presence of foreign objects.

Medication directly into the eye is the usual treatment for infectious keratitis. Many preparations

are available, but none is a sure cure for this problem. The intramuscular administration of 10 to 20 cc of sterile evaporated milk or bovine antiserum has been used successfully. Wide spectrum antibiotics and/or sulfonamides, corticosteroids, or enzymes in combinations and administered directly onto the eye are helpful in treating bacterial pink eye and secondary bacterial infection in viral pink eye.

Placing a cloth patch over the involved eye has been reported to be an effective means of treatment. The direct application of chemotherapeutics to the surface of the eye before placing the patch over the eye can aid in treatment. Direct medication of the eye surface followed by sewing it shut has been reported effective in the treatment of pink eye.

The application of 5.0 per cent nitrate solution to advanced cases of pink eye can be helpful.

