



Cattle Producer's Handbook

Animal Health Section

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Pinkeye

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Infectious pinkeye, also called infectious keratoconjunctivitis, caused by the bacterium *Moraxella bovis*, occurs commonly in beef cattle during the grazing season. Not every “white or cloudy” eye is infectious pinkeye, but observant cattle producers need to be aware, be watchful, and be ready to act! Rapid recognition, correction, and treatment will avert a costly, time consuming, and potentially blinding outcome.

We all know the pain, tearing, and squinting from a “finger in the eye.” These also are the first signs of a potential pinkeye infection in our cows. While tearing and squinting are actually the first signs of pinkeye, owners may fail to recognize pinkeye until they see a “white” or cloudy eye (Fig. 1). The reason tearing and squinting are so important as a first sign is because unless the surface of the cornea is abnormal, tearing and squinting do not occur.



Fig. 1. Corneal opacity (graying). Yellowing around eyelid indicates tearing. This is either an early lesion or a healed case of pinkeye.

Damage to the cells of the surface of the eye by dust, foreign material, viruses, UV light, or by flies causes inflammation and permits *M. bovis* to infect the eye. The inflammatory response causes corneal opacity, clouding, or whitening of the eye; the inflammation and the infection stimulate the infiltration of blood vessels into the cornea to control the infection and heal the damage. Progression of the inflammation and infection without treatment can lead to ulceration and protrusion of the cornea (Fig. 2). All animals showing tearing and squinting need examination!

Treatment is most effective if initiated as early as possible in the course of the infection/condition. Using a clean latex glove that is moistened with water, cattle



Fig. 2. Corneal ulceration.

producers should examine under each eyelid and behind the third eyelid for presence of cheat grass, hay, etc., and examine the surface of the eyeball for injury. If no foreign material or evidence of injury is found, treatment with sub-conjunctival procaine penicillin G and SQ long-acting tetracycline is adequate. An eye patch is generally not necessary for this level of involvement.

If ulceration or damage is present on the cornea, an eye patch or a third eyelid flap is indicated in addition to sub-conjunctival and systemic antibiotic therapy. Ulcers $>1/4^{\text{th}}$ inch in diameter or protrusion of the eye from the orbit require a third eyelid flap (Figs. 2, 3, and 4). Severe ulceration may require 2 or 3 weekly treatments with the third eyelid flap to allow the eye to heal. Severely ulcerated eyes will remain cloudy for the life of the animal even after treatment, although the animal is able to see well enough to function normally (Fig. 3, this animal was functional after two-third eyelid flaps).

Oxytetracycline is the only antibiotic approved for treatment of pinkeye! Nuflor™, Draxxin™, Baytril™, A180™, and penicillin have *in vitro* activity against *M. bovis*, but use of these antibiotics to treat pinkeye is an extra label drug use (ELDU). ELDU requires a veterinary prescription AND a valid veterinary:client:patient relationship. ELDU necessitates extended withdrawal times!

Vaccines are available to aid in the control of pinkeye caused by *M. bovis*. The efficacy of these vaccines is controversial. Vaccine efficacy may be improved when they are administered before the exposure season—dust, dry grasses, and flies. Hutch-reared calves may not respond well enough to vaccination to be protected during the bottle-feeding stage. Fly control significantly reduces the incidence and spread of *M. bovis*.

New strains of *Moraxella* organisms are being recovered with increasing frequency from outbreaks of pinkeye. The significance of these new strains, especially *M. bovicoli*, is not defined. However, these strain variants may contribute to the decreased effectiveness of the “pinkeye” vaccines!



Fig. 3. Bilateral corneal opacity and ulceration. This animal is blind.



Fig. 4. Third eyelid flap. Note suture through upper eyelid is pulling the third eyelid over the eyeball.



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