**Pinkeye (Infectious Bovine Keratoconjunctivitis)**

**Clinical signs and risk factors**

Pinkeye is a wide spread and highly contagious disease of cattle. The earliest signs of the disease are excessive tearing, squinting and blinking, and sensitivity to sunlight. The inner lining of the eyelids and the eyeball will become reddened. Eventually the central area of the eye will become clouded or white and within one to two days ulcers may develop on the cornea of the eye. These ulcers will enlarge and blood vessels will begin to form in the cornea to promote the healing of the ulcer. Many of these ulcers will heal on their own, however, some cases if left untreated will result in rupture of the cornea or in permanent blindness. One or both eyes may be affected.

The infection is caused by a bacteria called *Moraxella bovis*. Certain animals may become ‘carriers’ of this bacteria and harbour the infection from year to year. These carrier animals may be the source of new infection in the herd in following years. Several other factors predispose cattle to infections with *Moraxella bovis*. A major factor appears to be the amount of exposure to ultraviolet (UV) radiation. This is one of the main reasons that most pinkeye infections tend to occur in the summer time when cattle are exposed to a large amount of UV radiation. A lack of eyelid pigmentation has also been suggested as a factor that predisposes cattle to pinkeye infections. The face fly of cattle (*Musca autumnalis*) has been shown to be an important carrier of the bacteria. An increase in population of face flies has been associated with an increase in the number of cases of pinkeye.

**Treatment and prevention**

The cornea of cattle has a remarkable ability to heal, and many cases of pinkeye may heal spontaneously without any treatment. However, treatment of early cases will speed healing and prevent blindness and permanent damage to the eye. A wide variety of antibiotics with different routes of administration have been used to treat pinkeye in cattle. However, administration of antibiotics in the form of ophthalmic ointments, drops, sprays or powders must be applied three times daily into the affected eye making it very impractical for feedlot cattle. As well, certain sprays and powders may actually be more irritating than beneficial.

Two injections of long-acting oxytetracycline (OTC), given 72 hours apart, has been shown to reduce the duration of clinical signs, eliminate *Moraxella bovis* from affected eyes, and prevent the recurrence of lesions. This appears to be a far more practical form of treatment for most early cases of pinkeye in the feedlot.  
  
One other form of antibiotic therapy commonly used is the use of ‘subconjunctival injections’ of penicillin. A 1 ml dose of penicillin or a combination of penicillin and steroids is injected under the conjunctiva of the upper part of the eyeball using a 25 gauge needle. Since this is a difficult procedure to accomplish, 5-10 ml of penicillin have sometimes been injected into the upper eyelids instead. It is thought that the penicillin acts as a depot of antibiotic which slowly leaks out of the injection site onto the surface of the eye. Recent studies have shown that repeated injections of small doses of penicillin or penicillin and steroid combinations do not appear efficacious. There have been no controlled studies that have evaluated the efficacy of injections of penicillin into the upper eyelids of cattle with pinkeye. In fact, injections with antibiotics other than penicillin could actually do more harm than good. Some antibiotics are very irritating and can cause severe swelling and damage. In summary, antibiotic treatment should be limited to injections of long-acting OTC only, unless directed to do differently by your veterinarian.  
  
In very severely ulcerated eyes, it may be necessary to provide some form of protection for the cornea. Your veterinarian may be able to protect the eye by suturing the third eyelid over the eye or by temporarily suturing the eyelids together. Commercial patches are also available which can be glued over the affected eye.  
  
In addition, ASA (aspirin) boluses given orally can provide short term pain control and decrease inflammation. Severe cases may require a veterinarian to provide other medical or surgical treatments in order to avoid total blindness or rupture of the eyeball.

Reduction of face flies is an important factor in controlling pinkeye. The use of insecticidal powders, back rubbers or ear tags results in a reduction in the number of cases of pinkeye, but does not completely eliminate the disease. A vaccine for pinkeye is also available. However, a Canadian field trial was only able to show that vaccinated animals had less severe clinical signs. It is doubtful that this vaccine would be economically worthwhile to use in a feedlot situation. The use of long-acting OTC on arrival in many feedlots to prevent bovine respiratory disease may actually help to prevent pinkeye by eliminating the bacteria from ‘carrier animals’. However, this method of prevention has not been tested using controlled clinical trials.