



Vet Call

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Pinkeye problems

Pinkeye is a painful eye disease that is found throughout the world in most, if not all, breeds of cattle; however, it is more common with certain breeds and certain environmental conditions. Herd outbreaks of pinkeye may occur at any time of year, but the incidence is highest during summer months.

Disease origin

The germs causing pinkeye generally cause problems following another injury to the eye caused by bright sunlight, dust, wind, tall grass or weeds, plant seeds, pollen, flies, or diseases such as infectious bovine rhinotracheitis (IBR). If these injuries are not followed by an infection with pinkeye germs, the animal will only have a short period of irritation as evidenced by excessive tearing. In contrast, if injured eyes become infected, true pinkeye can result. A veterinarian may need to examine affected cattle to determine which eye disease is the problem.

Several different organisms cause pinkeye infections; the most common is *Moraxella bovis*. This germ has hair-like structures called pili, which enable the organism to become attached to the surface of the eye. In addition, *M. bovis* produces an enzyme that destroys cells on the eye's surface. It can be transmitted to other cattle by direct contact with eye and nasal discharges, or it may be carried from one animal to another by face flies.

Face flies are involved in the spread of pinkeye because they are very irritating to the eyes of cattle, making them more susceptible to infection. Flies pick up the germ organism while feeding on the faces of infected

animals, spreading it to the eyes of other cattle as they move through a herd.

Calves are more susceptible to pinkeye than older animals, partly because they have not developed immunity and also because their eyes are physically closer to dust, pollen, and tall grass or weeds.

Generally, cattle that have been infected with a particular type of *M. bovis* will not develop the disease again for more than a year. However, there are various types or families of this germ, and immunity to one type does not mean the animal is immune to other types of the organism. In addition, a different germ, *Mycoplasma bovaculi*, can cause eye infections that look very similar or identical to pinkeye, and immunity to previous *M. bovis* infections will not protect against mycoplasma infections.

The earliest indication of pinkeye is increased tearing and excessive wetness around the eyes. When examined more closely, the inside lining of the eyelid and the white portion of the eye will appear red. As the disease progresses, the eye becomes cloudy or white. An ulcer often is formed in the center of the visual portion of the eye, and if the ulcer is deep enough, the eye can rupture.

Without treatment, many animals will

heal in three to six weeks. Some animals heal with no evidence of previous problems, while more severely affected individuals will have a white scar on the eye surface that may fade over time. Eyes that have ruptured may become blind and extremely disfigured.

Treatment

Antibiotic therapy and reducing environmental hazards are the best methods of treatment. Most strains of *M. bovis* are susceptible to many available antibiotics that can be injected under the skin of the neck. Some veterinarians prefer to inject antibiotics into the eyelid. Covering the eye by gluing a cloth patch over the face or sewing the eyelid shut will help make the animal more comfortable by decreasing sunlight exposure. This also helps to decrease the spread of the disease by preventing flies from contacting the infected eye secretions.

Prevention and control of pinkeye involves reducing exposure to environmental risk factors such as dust, pollen, and tall grass and weeds through pasture management; reducing face fly burden through use of chemical pesticides; and isolating affected individuals from the rest of the herd. The number of animals affected during a pinkeye outbreak can be greatly reduced if affected animals can be identified early and sorted into a pasture away from the rest of the herd.

The fact that animals appear to be immune to *M. bovis* infection for up to 12 months after an infection and that older animals have a higher level of natural immunity would lead one to believe that vaccination would provide an effective method of prevention.

Experimental work has shown that animals vaccinated with one type of *M. bovis* will be immune to that type, but not to others. Many vaccines on the market today contain several types of *M. bovis*. Although these vaccines have been shown to be partially protective, they may not be completely protective due to the ability of *M. bovis* to change type and the presence of other organisms or environmental factors that allow the organism to overcome the animal's immune system.

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