



Vet Call

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Pinkeye

Pinkeye is a painful eye disease that is found throughout the world. This disease is more common in cattle with light-colored faces and in situations with bright sunlight, dust and certain other environmental conditions. Herd outbreaks of pinkeye may occur at any time of the year, but the risk is highest during the summer months.

Causes of pinkeye

The germs causing pinkeye generally follow a minor eye injury caused by bright sunlight, dust, wind, tall grass or weeds, plant seeds, pollen, face flies, or diseases such as 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, serious problems can result. A veterinarian may need to examine affected cattle to determine whether an eye problem is due to pinkeye or another disease.

Several different organisms cause pinkeye infections. The most common is *Moraxella bovis*. This germ has hair-like structures that allow the organism to become attached to the surface of the eye. In addition, this bacterium produces an enzyme that destroys cells on the eye's surface. *M. bovis* can be transmitted to other cattle by direct contact with eye discharges or 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. They pick up the organism while feeding on the face of infected animals and can spread 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, it is believed that 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 the other types of the organism. In addition, other germs such as *Mycoplasma bovoculi* and *Moraxella bovoculi* can cause pinkeye infections, and immunity to previous *M. bovis* infections will not protect against these infections.

Signs and treatment

The earliest sign of pinkeye is increased tearing, which appears as 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, and then, 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. 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's surface that may fade with time. Eyes that have ruptured will become blind and extremely disfigured.

Treating cattle with pinkeye with injections of antibiotics and reducing exposure to dust, weeds and sunlight is the best method 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 with a patch glued over the face or by sewing the eyelids shut will help to make the animal more comfortable by decreasing sunlight exposure, and it helps to decrease the spread of the disease by preventing flies from getting to the infected eye secretions. If possible, affected calves should be moved to shaded areas (to avoid direct sunlight) with no dust and where they can be easily treated to decrease face fly population.

Of course, the calves and their dams should be provided with adequate feed and water until they can be turned back out with the rest of the herd once the eyes have healed.

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 the use of chemical pesticides, and by isolation of 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. However, use of vaccines to prevent pinkeye disease has not been particularly successful. 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 to the presence of other organisms or environmental factors that allow the organism to overcome the animal's immune system.

Pinkeye is a frustrating disease because ranchers can go many years without problems, and then they can have a year where a high percentage of calves are affected — even though no apparent changes have taken place. Although vaccines are commonly used to help protect against the disease, there are a number of factors that work against this being a highly effective strategy.

Treatment of pinkeye cases requires a lot of labor, usually at a time when calves are on pasture and difficult to capture individually. Although no simple solutions are available, a commitment to good pasture management, effective fly control, and early detection and treatment of eye problems is the best strategy to minimize the effects of this disease.

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