

BEEF ANIMAL HEALTH

Pinkeye – A Disease of Plenty

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As is typical for the northern climes of the United States, we often see a "spring flush" in the pastures. When warm weather hits, provided there is adequate moisture in the soil, the grasses start to grow like they're afraid they'll freeze tomorrow. Rarely will you hear a cattleman complain that he has too much grass, but like all things, too much of a good thing is still too much.

In years when weather is very conducive for excellent pasture growth, there is also a higher incidence of pinkeye seen in cow herds. This can be explained, for the most part, by two things: high rate of pasture growth means grasses are likely unusually tall (depending on species) and are likely to be rubbing near the cows'/calves' eyes, and with high moisture springs comes a plague of flies. Face flies are usually the culprit. These are the flies that are seen around the cows' eyes, feeding on the cows' tears.

The typical organism that causes pinkeye is *Moraxella bovis*, which is normally found in the bovine eye. In the case of health, the bacterium lives and grows on the cow's eye, without causing any signs of disease. However, in the case of injury to the cow's eye, her normal defense mechanisms are compromised, and the bacteria will set up an "opportunistic" infection. Injury can occur by simply a blade of grass touching the cornea, and damaging the first layer of cells on the cornea, or by the cows' own

attempts to rid herself of the flies on her face.

Pinkeye affects the cornea of the eye, and usually nothing else. It also starts as a small point in the center of the cornea, and as the disease progresses, it affects more and more of the corneal surface, until the entire cornea is enlarged, white to yellow in color, and the cow is completely blind in the affected eye. It is important to note that during a moderate to severe infection of pinkeye, there may be blood vessels visible where there were none before. This is part of the body's attempt to heal by bringing circulating white blood cells to the sight of infection.

Typical signs of pinkeye depend on the severity of the disease. Some cattle may simply have some mild to moderate tearing (mild infection). Some cattle will have severe tearing, be photosensitive (sensitive to light) and are squinting, and there may be swelling noted around the affected eye. In severe cases, the cornea will be so enlarged and swollen, that the cow may actually have difficulty closing her eyelids over the affected eye.

When deciding to treat pinkeye, remember that cows are incredible healers. Even if you think that there is no hope for healing, unless the eye is actually ruptured, don't give up. Treatment of cattle affected by pinkeye is determined by the severity of

the infection. If you note simply tearing from the affected eye, with little to no signs of clouding of the cornea, you will likely have good success treating with a subcutaneous injection of oxytetracycline or an intraocular injection of penicillin (+/- dexamethasone). However, if there is a large degree of corneal opacity noted, treatment should include an antibiotic and the eye should be sutured closed or the eye should be covered with a patch.

Vaccination against pinkeye may be recommended if you typically have problems year after year. These are moist areas (often swampy areas) where there is a lot of tall, coarse grasses, where the cattle congregate to keep cool and keep the biting flies off of their bellies. An annual vaccination strategy may be prescribed for that cow herd. However, in areas where pinkeye is typically not a problem, and there is an outbreak in the odd year, vaccination may not be very cost effective. In a lot of cases, by the time the outbreak is recognized as such, and a vaccine is implemented, the worst of the outbreak is over. It typically takes cattle 2 weeks to mount an effective immune response to a vaccine, and by the time their immune system is effectively stimulated, the outbreak is over, and any healing noted is due to the fact that the worst of the problem is already past, and most cattle are already convalescing. The ideal time to get the vaccine into the cattle is a minimum of 2 weeks prior to the outbreak, which can be done if you are good at predicting weather patterns and how they will affect the fly population.

Some practices that can be implemented to decrease the incidence and/or severity of pinkeye are related to controlling the

inciting factors. If the problem is predominantly due to tall grass, a potential solution would be to clip the pastures to a more manageable height for the cows. If an overabundance of flies is the main culprit, fly control can be accomplished by putting insecticide impregnated ear tags in the cows/calves, pouring the cows with an oil based permethrin or pyrethroid insecticide, or providing the cows with oilers and rubs (for self-application of insecticide). When using fly tags, it is important to remove the tags after their labeled effective life has expired. If they are left in the cows' ears for longer, the amount of insecticide continues to decrease over time, and can select for insecticide resistant strains of flies. This may ultimately make them ineffective on your farm, and you may be forced to implement other fly control measures.