Biography:
Dr. Colin Palmer is an Associate Professor of Theriogenology (Animal Reproduction) at the Western College of Veterinary Medicine. Originally from Nova Scotia, Dr. Palmer worked in mixed practices in Ontario and British Columbia and has owned/operated a practice in Saskatchewan. Dr. Palmer along with his wife Kim and children Lauren, Emily and Carter run a herd of purebred Red Angus cattle under the KC Cattle Co. name.

A Breeder's... Veterinary Perspective

Pinkeye

Just like every other cattle producer out there it seems that I have to deal with my own share of doctoring from time to time. This year my problem is pinkeye which I now have dubbed "Pinkeye - the New Old Problem". In nearly 20 years of raising cattle on the prairies I have not had one single case in my own herd. Sure it is something we regularly see in veterinary practice, but probably because of my apparent good fortune I began to believe it was a problem limited mainly to whited face cattle. I guess that is not entirely true since I have Angus cattle.

Pinkeye, or infectious bovine keratoconjunctivitis (IBK) as it is named in the literature, is the most common eye disease of cattle. Medical terms are always descriptive and really don't need to be scary. Infectious means what it says – a bacteria, virus, fungus, parasite is the cause, and "itis" tacked on to the end of a word always means inflammation. Keratitis refers to inflammation of the cornea or clear surface of the eyeball and conjunctivitis refers to inflammation of the pink (conjunctival) tissue around the eyeball. Inflammation of both tissues equals keratoconjunctivitis.

The veterinary literature frequently states that pinkeye occurs most commonly in Hereford or Hereford-cross cattle, but all breeds can be affected. The most widely accepted cause is a bacteria called Moraxella bovis (M. bovis) which possesses the ability to attach to the surface of the eye after which it releases a toxin that damages corneal cells. Cell damage on the cornea ultimately gives way to, slow-healing, painful surface ulcers. Mycoplasma, chlamydia and infectious bovine rhinotracheitis (IBR) have also been implicated. Many times these other bugs serve to assist M. bovis by enabling its colonization and spread; however, they are also capable of producing ocular disease on their own. Another bacteria, Moraxella bovoculi, was recently discovered in bacterial cultures from the eyes of calves with pinkeye, but so far it appears that it may only be incidental or play a supportive role to M. bovis. Both M. bovis and M. bovoculi can be cultured from otherwise normal healthy eyes providing proof that our understanding of what tips the scales toward the development of full-blown disease is far from complete. A number of external factors have been implicated including ultraviolet radiation, dust, and sharp plant leaves/ plant awns. Moraxella bovis has adapted to living on and in flies. Flies irritating the eyes are without a doubt one of the most important causal factors with the ability to spread the disease rapidly throughout the herd. It is also very likely that certain strains of M. bovis are more likely to cause disease than others; therefore, mixing of animals from different sources may expose seemingly resistant cattle to an indefensible challenge. The immune system is capable of mounting a protective response to M. bovis and commercial vaccines have been available for some time. Maxi/Guard® and Pinkeye Shield® are examples both requiring an initial shot and a booster. Other products, or these same products under different names may be available in other countries. Vaccination is not considered to be 100 percent effective, but may be very helpful in a herd situation to limit the number of new cases. One of my practitioner friends says that she has found vaccination to be very helpful in herds dealing with an outbreak as it will dramatically decrease the number of new cases. Your plan of attack should be to treat the clinical cases with antibiotic and then vaccinate the rest of the herd. Vaccination will do nothing for the animals with disease. Following an outbreak there should be some level of herd immunity, but the duration of protection is probably short-lived - less than a year. Mixing cattle, especially young ones, or a herd that has never experienced pinkeye with diseased cattle will most certainly result in problems.

Classic cases of pinkeye include corneal edema expressed as the typical blue-gray opacity and ulceration. Excessive tearing, squinting and swelling of tissue may be all that is present with very early cases and are the first signs to disappear during recovery. Without treatment, opacity and ulceration develop in as little as 1 or 2 days and will require several weeks to months to completely heal. Severe cases of pinkeye should not be ignored as swelling in combination with a weakened corneal surface can lead to rupture of the eyeball and permanent blindness. Healing eyes continue to look nasty for several weeks, but you will know that it is getting better because of the absence of tearing and squinting. The red lines on the cornea represent the ingrowth of blood vessels as the cornea heals. Once the cornea clears the affected animal will regain limited vision in that eye. Nasty corneal scars are generally permanent.

A number of treatment options are available. Topical penicillin or penicillin carefully injected into the side of the eyeball or swollen eyelid tissue can provide adequate levels of drug in the tear fluid. Injected drugs tend to maintain higher concentrations of drug for longer than topical applications. Oil based, topical penicillin treatments, for example mastitis preparations, persist longer than the aqueous product. If injecting penicillin or applying oil based penicillin preparations then treatment should be repeated every two days. Tilmicosin (Micotil®) subcutaneous or oxytetracycline intramuscularly, or preferably subcutaneously, have both been shown to shorten the clinical course of disease and decreased M.bovis spread to susceptible herd mates. When treating animals it is a good idea to employ some sort of fly control - Boss®or Cylence® pouron products are great for treating the individual animal with a duration of at least 2 weeks. Eye protecting patches can decrease fly infestation and protect the eye from irritating sun light, but leave the bottom open to allow the discharge to drain.