



River Valley Veterinary Clinic

May 2018 Newsletter

by Carrie Bargren, DVM

Pinkeye Season

(updated from July 2016)

Infectious Bovine Keratoconjunctivitis, commonly known as Pinkeye, is a multifactorial disease caused by a combination of infectious agents and environmental stimulants. In cattle, the most common primary infectious agent is the bacteria *Moraxella bovis*, which has over 20 subtypes that all cause Pinkeye, usually in the summer months. In the last few years *Moraxella bovoculi* and its subtypes have emerged as a slightly less common, but harder to treat primary infectious cause of Pinkeye at any time of year. Most infections involve a combination of both bacteria. In small ruminants, the primary cause of Pinkeye is from *Chlamydia psittaci ovis* and *Mycoplasma conjunctivae*. Usually, a healthy animal's immune system is able to prevent an eye infection. Only when the eye is irritated by something in the environment does the eye become vulnerable to bacterial invasion and infection.

The major source of eye irritation comes from face flies feeding from eye and nasal secretions. Other irritants include tall pasture plants or dust scratching the surface of the eye. A third form of irritation is not commonly thought of: UV rays from sunlight. Constant sun exposure without shade is very irritating to the eyes, especially in animals with white eyelids such as Herefords.

Face flies are also the main culprit for transmitting the disease within the cattle herd and between herds. Animals that were previously infected can be silent carriers, showing no symptoms of infection but shedding *M. bovis* or *M. bovoculi* in eye and nasal secretions. The bacteria survive for 3 days on a face fly, so a fly feeding on multiple animals can easily transmit the disease to the entire herd. Carrier animals will shed the bacteria for an extended period, which is the main reason the bacteria survive the winter and cause a new outbreak the following year. Infections are more common in warm months due to the increased presence of eye irritants, but with *M. bovoculi* infections could happen any time. Bacteria can also be transmitted to an uninfected eye through direct contact with the eye/nasal secretions of an infected animal in both cattle and small ruminants. Infected secretions can also be rubbed onto fencing, gates, feed bunks, etc. and picked up by an uninfected animal.

After transmission and irritation, it takes at least 2-3 days for symptoms to begin. Initially, the infected eye will be excessively watery and squinting. The conjunctiva (inner surface of the eyelid and white part of the eyeball) will become swollen and red while the cornea (transparent part of eyeball over the iris and pupil) remains clear. Within a few hours the cornea will develop a white haze which slowly intensifies until it's completely opaque in 48-72

hours. A bluish tinge to the haze (corneal edema) indicates inflammatory cells brought in by blood vessels which very slowly grow into the cornea. The vessels can add a pinkish hue to the eye, hence the name 'Pinkeye.' A milky white or yellow cornea indicates a severe infection with pus inside the cornea. Next, an ulcer forms in the center of the opaque cornea which looks like a small divot that will grow wider and deeper and is extremely painful. Left untreated, the ulcer will eventually perforate the cornea, rupturing the eyeball and resulting in permanent loss of vision. Loss of the eyeball is rare since most cases are treated very early when the eyes begin to water. With timely treatment, the eye will fully recover in 3-5 weeks, although a few will retain a small white scar on the cornea.

As with any disease, prevention works better than treatment and for Pinkeye the best method is a combination of vaccination and fly control.

Proper vaccination is critical to prevent infection in cattle herds. Vaccines for *M. bovis* have been available for years, and for many farms these vaccines provide enough immunity to control infections. However, when a herd outbreaks occurs despite good vaccination, *M. bovoculi* is likely the major cause and the *M. bovis* vaccines don't cover it. Previously, the only way to vaccinate against *M. bovoculi* was to develop a vaccine specific to the herd, an autogenous vaccine, but it is expensive and takes 4-6 weeks to develop. However, last year a *M. bovoculi* vaccine was released that is readily available and cost effective. It can be used in combination with the *M. bovis* vaccines to provide a wide spectrum of coverage and greatly reduce infections for herds that tend to have large outbreaks. Cattle should be vaccinated at 4-6 months of age, with calf-hood vaccinations, and boosted yearly. Check the vaccine labels carefully, some vaccines need a booster 21 days after the very first dose, such as the *M. bovoculi* vaccine. The yearly boosters can be timed with the season or given at a specific time in each cow's lactation. Additionally, proper vaccination against IBR, which is included in the cattle respiratory vaccines, reduces the chance of a respiratory infection contributing to a Pinkeye infection. However, during an outbreak of Pinkeye, do not vaccinate infected animals with a modified live vaccine, as it could increase the eye's sensitivity toward infection. As a general rule, only healthy animals should be vaccinated, and Pinkeye is no exception. Unfortunately, there is no vaccine available for Pinkeye in small ruminants, so prevention efforts involve maintaining a closed herd and isolating new animals for 30 days before introduction to the flock.

Since a vaccine won't stop flies from carrying the bacteria fly control is also essential for cattle and small ruminants, whether it's in the form of fly tags, insecticidal pour-ons, back rubbers, dust bags, knock-down sprays or fly traps, ideally a few of them combined. Cattle manure management is important since flies need manure to reproduce. Regularly removing manure from pens and spreading it to dry quickly will drastically reduce the flies' ability to reproduce. There are feed-through products available which are fed to cattle, pass through the animal unchanged and then either inhibit or delay fly reproduction in the manure. However, these products only help if they're fed starting a month before fly season begins (start now!) and the animal must consume the correct dose. If flies are already out, it's too late for these products. Also, they can't be confused with treatment for the animals, they have no effect on the animal.

Use multiple methods for the best control, but make sure to switch any pesticide drug classes regularly to avoid encouraging resistance amongst the flies. Use appropriate rotational grazing practices or clip pastures to reduce the potential for eye irritation from long plants. Lower overhead feeders and roll out round bales so that cattle can eat without sticking their entire head in and risk scratching their eyes. Proper bunk space reduces direct contact between infected and uninfected animals. Ideally, separate cattle with active infections until lesions resolve. And since we can't give all the cows, sheep and goats sunglasses, ample shade and

breeding animals for pigmented eyelids will help reduce irritation from UV light.

If an infection happens despite multiple methods of prevention, early treatment (when the only symptoms are a watery eye and squinting) not only stops the active infection quickly but prevents bacterial shedding that would infect other animals in the herd. The vast majority of initial infections in cattle and even those with small ulcers respond well to long-acting tetracyclines like 300 Pro LA or LA200. Non-steroidal anti-inflammatories (NSAID's) like meloxicam or Banamine will help control the pain (it's incredibly painful) and encourage feed intake during recovery. Treatment options for small ruminants are extra-label, so consult a veterinarian prior to treatment. Advanced stages of infection with large ulcers may require an eye-patch or antibiotics injected directly into part of the eye and is best done by a veterinarian. There are antibiotic sprays and ointments, but they only work if applied 3-4 times daily until the cornea heals, which is usually not feasible. Additionally, keep in mind that most commercial ointments are either illegal to use in cattle or have extremely long withdrawal times. Currently, there is no labeled/legal feed-additive treatment for pinkeye in any species.

Hopefully summer is finally on its way, so start making plans now to booster Pinkeye vaccines and control flies before they appear!

RVVC SUMMER PRODUCER MEETING!

Beef Quality Assurance – Injection Site Wet Lab
by Dr. Dick Wallace, Zoetis

Friday, June 29th at Noon
Knights of Columbus, Reedsburg on the other side of the RVVC-Reedsburg parking lot.

Lunch will be provided. If you plan on attending, please call RVVC to **RSVP by June 21st**. We hope to see you there!

RETIREMENT ANNOUNCEMENT and CELEBRATION!

It is with mixed feelings that we announce the retirement of **Dr. Mike Knoll** in July. He has been in practice at RVVC for 32 years. We will be hosting a farewell open house **June 1st** at the **Plain clinic from 2-4pm** and all are invited. Please join us in showing Dr. Knoll our gratitude and that he will be greatly missed. Refreshments and cake will be provided. See you there!