

## VCM 501- DR. OYEWUSI

### INFECTIOUS KERATITIS, INFECTIOUS BOVINE KERATOCONJUNCTIVITIS (IBK) OR (PINK EYE)

#### **Introduction**

Infectious keratitis (pinkeye) is a highly contagious disease causing inflammation of the cornea (the clear outer layer) and conjunctiva (the pink membrane lining the eyelids) of the eye. It is also associated with ulceration of the cornea and potential loss of an eye.

**Aetiology:** *Moraxella bovis* causes IBK, an important ocular disease of cattle,

**Epidemiology:** It occurs worldwide and affects cattle of all ages and breeds. The disease is seasonal in nature.

**Transmission:** The disease is transmitted by direct contact, aerosols, and fomites. Flies may serve as mechanical vectors of the bacteria. . Carrier animals are animals that show no signs of clinical disease but shed the bacteria in their secretions. Carrier animals may shed the organism for long periods of time so they are an important factor in the spread of the disease and its survival over winter.

**Economic importance:** The disease causes economic losses arising from decreased weight gain in beef breeds, loss of milk production, short-term disruption of breeding programs, and treatment costs. Affected animals may also bring significantly discounted prices when sold. Animals which are blind in both eyes are at risk of death through accidents or starvation and they are also a significant animal welfare concern.

**Pathogenesis:** The primary infectious agent for pinkeye is the bacterium *Moraxella bovis*. This bacterium is found in the eyes of many recovered and apparently normal cattle. Pinkeye is a multifactorial disease, which means there are many factors that predispose and contribute to the development of the disease.

Eye irritation is necessary for the development of the disease. Face flies feed around the eyes and nostrils of cattle, causing a mechanical irritation to the eye and spreading the disease from one

animal to another. The bacteria can survive on the flies for up to four days, allowing that fly to infect numerous animals.

Other sources of eye irritation which predispose the animal to disease are tall weeds and grasses; feed and dust,. Dust on windy days, and exposure to excessive UV sunlight also increase the chances of disease development.

**Clinical signs:** include excessive watery lacrimation, blepharospasm, photophobia, corneal ulceration, opacity, and in some cases, a slight to moderate fever with fall in milk yield and depression of appetite.

There are four stages of pinkeye. The disease may resolve at any stage while animals that receive no treatment will often progress through all four stages.

- **Stage I:** Cattle have excessive tearing and increased sensitivity to light. They will blink frequently and there is redness along the eyelids.
- **Stage II:** The clinical signs described in Stage I continue, but an ulcer spreads across the cornea.
- **Stage III:** The ulcer covers most of the cornea and the inflammation continues to spread into the inner parts of the eye.
- **Stage IV:** The ulcer extends completely through the cornea, and the iris. These eyes may be permanently damaged and the animal rendered blind.

#### **Treatment:**

- Pinkeye is frequently a self limiting disease with mild to severe clinical signs and blindness in approximately 2 percent of the cases.
- Early treatment of cattle with pinkeye is important, first for a successful outcome for the affected individual animal and then to stop the shedding of the bacteria, decreasing the risk of transmission to other cattle.
- It is based on antibiotics effective against moraxella. Antimicrobial therapy should be administered both parentally (oxytet LA) and subconjunctivally or topically early in the disease course.

**Prevention:**

- Fly control: examples are fly tags, fly traps, insecticide pour-on and knock-down sprays with insecticides. Face flies can develop resistance to pesticides over time, so switching the drug class of the pesticides used every year is important. For example, if pyrethrins are used one year, then organophosphates should be used the following year.
- Isolation and prompt treatment of affected animals. It is important to remove animals suffering from pinkeye from the herd because they serve as a reservoir for the organism.
- Appropriate grazing and pasture clipping to prevent seed-head development helps to decrease irritation to the eyes of cattle, and reduces resting areas for flies.

**Lecturer: Dr. (Mrs) Oyewusi, I.K.**

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