MANAGEMENT

Vet Call

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Tips for pinkeye prevention, control

The bacterium* Moraxella bovis (M. bovis) *is the most commonly recognized cause of pinkeye. However, a number of factors are involved in making the animal susceptible to infection and in passing the organism from one animal to another.

Some of the factors associated with pinkeye are the age of the animal; face fly infestation; irritation from plants, dust or pollen; and ultraviolet (UV) light damage to the surface of the cornea. Cattle that do not have pigment around the eye have greater eye irritation due to sunlight, but the disease affects all breeds of cattle. Younger cattle are most commonly and most severely affected by pinkeye.

Eye problems

A number of other diseases can mimic pinkeye in cattle. Infectious bovine rhinotracheitis (IBR), mycoplasma infection, vitamin A deficiency, and foreign objects in the eye or eyelid (dust, grass seeds, etc.) can all cause or contribute to irritated, watery eyes.

M. bovis organisms are found in the eye and nasal secretions of animals with active cases of pinkeye and in carrier animals that do not have symptoms. Anything that transmits secretions from one animal to another can spread pinkeye.

Although a number of fly species can carry the pinkeye organism, the face fly is considered the primary problem. The face fly feeds on the secretions around the eyes, and its mouthparts cause irritation to the cornea. By moving from one animal to another, face flies can spread the disease through a herd.

Symptoms of pinkeye

- ► Excessive tearing
- ► Intolerance of light (shading or closing the eye)
- ► Inflammation and redness of the tissue around the eye
- ► Reflexive closing of the eyelids
- ► Corneal opacity (cloudiness)
- ► Ulcer in the center of the cornea
- ► Contraction of the pupil
- ► Thick, yellow discharge from the eye
- ► Corneal destruction
- ► Small blood vessels invading the cornea
- ► Fibrosis

Other methods of passing the disease to animals include hands and fingers that handle multiple calves for processing, and bottles and other containers of pinkeye medicine that are used on multiple animals. Direct contact between animals rubbing faces can also transmit the organism.

Once the *M. bovis* organism infects the eye, it can release enzymes that damage the cornea. The body responds to the infection with inflammation of the cornea, which causes the animal's own cells to release other enzymes that can further damage the cornea. The damage can proceed to the point that the cornea becomes opaque (not clear), ulcerated and scarred.

The disease usually lasts three weeks or more in individuals, with corneal cloudiness (opacity) or scarring that can gradually and partially clear over the next several weeks to months. In severe cases, blindness may result if the cornea is affected so severely as to cause damage to underlying eye tissues.

Diagnosis and treatment

Diagnosis of pinkeye is usually done by differentiating it from other eye problems. Pinkeye typically has a central corneal ulcer, which is absent in other eye diseases. It is always important to examine under the eyelid to make sure that no foreign body is present. A definitive diagnosis can be made by culturing a swab of the eye in a diagnostic laboratory.

Treatment of pinkeye is often successful because the eye has a tremendous ability to heal, and because the organism (*M. bovis*) is susceptible to many available antibiotics. The antibiotics can be administered as an ointment on the corneal surface (topical treatment), by an injection into the eyelid, or by an intramuscular (IM) or subcutaneous (sub-Q, under the skin) injection.

Both topical treatment and eyelid injection of antibiotics are effective if applied two to three times daily. Sub-Q or IM injections of long-acting oxytetracycline antibiotics can give two to three days of therapy.

Atropine, which causes the pupil to dilate, is also used to decrease the pain associated with pinkeye, but because of the pupil dilation, the eye must be sewn shut or covered with a patch for protection. Whether or not atropine is used, protecting the eye from UV sunlight and environmental irritants with a patch or by sewing the eyelids shut is often helpful.

Control and prevention

Strategies to prevent pinkeye involve decreasing the face fly population on the herd and segregating affected animals as early as possible in the course of the disease.

Pyrethrin ear tags are the most effective method to decrease the herd's face fly population. Although horn fly populations can become resistant to pyrethrin insecticides, face flies have not shown resistance at this time. Because the pinkeye organism can be transmitted very rapidly, removal of affected animals at the earliest sign of the disease is necessary to prevent spread in the herd.

Other management strategies to control the contributing factors of pinkeye are also beneficial. Grazing and pasture management (clipping) to keep grass in the vegetative stage (not producing seed heads) and to eliminate weeds helps to prevent eye irritation from tall plants. Providing shade and selecting for cattle with pigment around the eyes decreases UV damage to the cornea. And because IBR infection may either mimic or predispose animals to pinkeye, vaccines to decrease the incidence of IBR are probably helpful.

Both vaccination against *M. bovis* and feeding tetracycline antibiotics in a supplement or mineral mix have been used in efforts to prevent pinkeye. Neither method is universally successful.

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