

## Key Highlights

- Pinkeye can occur any time of the year.
- The major organism that causes pinkeye is *Moraxella bovis*.
- Pinkeye can be caused by *Moraxella bovoculi*, which is thought to be more prevalent in the winter.
- The disease is often associated with summer grazing because eye defenses are weakened by sunlight, irritation from flies, dust and plants and their pollen.
- Losses from pinkeye are estimated at \$150 million annually.<sup>2</sup>

# Winter Pinkeye

Pinkeye isn't just a summer concern. Help producers prevent and treat pinkeye year-round to prevent losses.<sup>1</sup>

## INTRODUCTION

Pinkeye-causing bacteria don't restrict themselves to a single season. Even in the winter, cattle are susceptible to the disease. To diagnose and treat it properly, the most important step is to break out of the summer-only mindset, recommends Dee Whittier, DVM, MS, professor at the Virginia-Maryland College of Veterinary Medicine. "It's common for people to get confused because we expect pinkeye in the summer," Whittier says. "When we see it in the winter, we think it's something different. We're used to seeing it in the summer because more sunlight weakens the eyes, plus face flies and dust – those things set up the eyes to get a case of pinkeye. Certainly, we can have it in the winter just the same. It's a contagious organism you get cattle close together and they will spread it."

In his area, Whittier says that he often sees winter pinkeye in weaned stocker calves that were co-mingled from different sources. Calves eating out of feeders will often touch faces and spread the bacteria. Furthermore, hay can scratch the cornea and allow for infection to begin.

## DIAGNOSE PROPERLY

Typically, winter pinkeye is commonly mistaken for Infectious Bovine Rhinotracheitis (IBR), which can cause the tissue around the eye to become inflamed. However, winter pinkeye will cause an ulcer that IBR will not. In addition, IBR-infected cattle will have signs of respiratory disease like coughing and nasal discharge. Often, producers and veterinarians will revaccinate for IBR once signs of red, inflamed eyes appear. However, this can actually further a pinkeye outbreak. Quickly identifying the correct cause is important to rapid treatment, Whittier says.

Whittier recommends rapid treatment of pinkeye with antibiotics like tetracycline or tulathromycin as the best method for preventing losses. Cattle with pinkeye don't gain as fast as their healthy counterparts. "There is evidence that aggressive treatment helps prevent weight loss," he says. "In the face of an outbreak, vaccinating with a modified live vaccine for IBR can have an irritating effect on the cornea and actually create more cases." Worse yet, more severe cases can cause blindness that can lead to dockages at sale time. Even with aggressive treatment, don't expect improvements overnight.

"When you see a totally cloudy eye or blood vessels moving into the cornea, that's not going to get better in two days," Whittier says. "It can take substantial healing time. The treatment helps but it's not a miracle."

## BACTERIA BACKGROUND

There are two major types of bacteria that cause pinkeye in cattle: *Moraxella bovis* and *Moraxella bovoculi*. Either organism can cause pinkeye during any season. However, *M. bovoculi* tends to be found in more winter pinkeye cases, says Bruce Addison, president and founder of Addison Biological Laboratories, Inc.

"When we do winter pinkeye cultures, we almost always find *Moraxella bovoculi*," he says. "Animals are carrying this organism in their nasal passages in their upper respiratory tracts. It's commonly present even though we see no eye disease at all. The organisms are there, and if the cornea is somehow scratched, it can become secondarily infected with the *Moraxella* organisms."

While most producers commonly think of face flies as the carrier of the disease, Addison notes pinkeye can be spread in several ways. In addition, many parts of the country will continue to have fly populations throughout the winter.

Some estimates put the losses from pinkeye at about \$150 million annually from reduced value of animals and reduced weaning weights.<sup>1</sup>

## VACCINATION

To help prevent pinkeye, some producers will vaccinate in the spring before fly season. For producers with a year-round fly challenge, another vaccination in fall can be beneficial.

"We know an animal with pinkeye can go an average of two weeks without gain in the feedlot," Addison says. "It's not unusual to wean calves 30 to 40 pounds lighter if they've had pinkeye. Vaccination is like having your car repaired after a wreck; either you buy insurance or pay out of pocket."

Addison cautions that the only commercial vaccines on the market today are for *M. bovis*, which is still the most important pathogen that causes pinkeye. If producers and veterinarians would like to vaccinate for *M. bovoculi*, an autogenous bacterin must be created. The process takes about two weeks after the organism is isolated and identified within a herd.

In the future, Addison says his company is working on a commercial license for a combination *M. bovis* and *M. bovoculi* vaccine. Pending the results of an additional licensing study, the company expects to have the vaccine approved by the USDA by 2016.

"Typically, pinkeye does not hit all at once," Addison says. "It moves through the herd over a number of weeks. Therefore, you can get a handle on it. Many people who know they have that problem can order an autogenous vaccine well in advance and have it available for their spring vaccination program."

## 3 Things<sup>3</sup>

An animal may develop immunity against disease through:

1. Innate or inherited immunity.
2. Acquired immunity resulting from having disease and recovering or stimulated by vaccination.
3. Acquired immunity through passive injection of antiserums or transferring antibodies from dam to offspring.

### References

<sup>1</sup>Ryan, Jennifer. Vet advantage. Livestock, Winter 2014. Accessed Feb 2020.

<sup>2</sup>Pinkeye in cattle. Mississippi State University Extension Service. POD-02-14.

<sup>3</sup>Oklahoma Cooperative Extension Service "Livestock Disease Cause and Control."