

Pinkeye Shield® XT4

Moraxella Bovis Bacterin

For use in healthy cattle as an aid in the prevention of pinkeye caused by *Moraxella bovis*.

■ One Dose

Pinkeye Shield XT4 is approved for one-dose administration, with no booster dose necessary the first year. The convenient 2-mL dose provides ease of administration.

■ Effective and Reliable

Pinkeye Shield XT4 contains four inactivated field isolates. **Pinkeye Shield XT4** is adjuvanted with the exclusive Xtend® SP for optimal antigenicity.

■ Economical

Vaccination with **Pinkeye Shield XT4** helps to prevent costly pinkeye outbreaks, saving producers both time and money.

Product Numbers

Pinkeye Shield® XT4

#274 – 20mL – 10 doses
#275 – 100mL – 50 doses

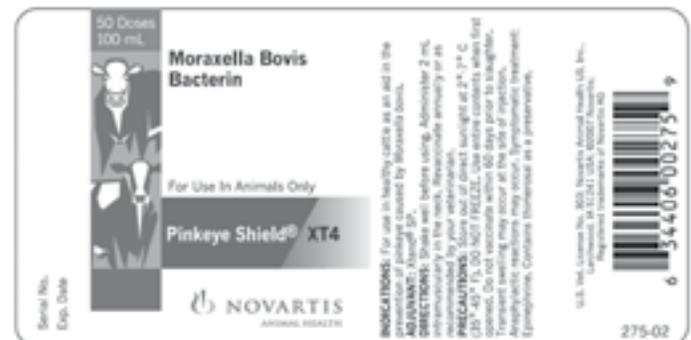


Pinkeye Shield® XT4

ADJUVANT: Xtend® SP

DIRECTIONS: Shake well before using. Administer 2 mL intramuscularly in the neck. Revaccinate annually or as recommended by your veterinarian.

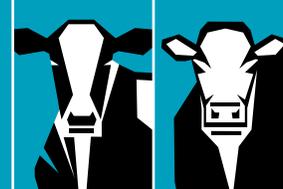
PRECAUTIONS: Store out of direct sunlight at 2° – 7°C (35° – 45°F). DO NOT FREEZE. Use entire contents when first opened. Do not vaccinate within 60 days prior to slaughter. Transient swelling may occur at the site of injection. Anaphylactic reactions may occur. Symptomatic treatment: Epinephrine. Contains penicillin, streptomycin, and thimerosal as preservatives.



Customer Service
(800) 843-3386

www.livestock.novartis.com

© 2013 Novartis Animal Health US, Inc.
Pinkeye Shield and Xtend are registered trademarks of Novartis AG, Basel, Switzerland.
NCV130004A



Technical disease information

Infectious bovine keratoconjunctivitis (pinkeye, IBK) is an economically important cattle disease with worldwide distribution. One of its causes is a bacteria, *Moraxella bovis*, that is easily transmitted from animal to animal by flies that feed on eye secretions of infected animals. Clinical signs of pinkeye include sensitivity to light, lacrimation, conjunctivitis, corneal opacity, and corneal ulcers, which may affect one or both eyes. Most affected animals will recover within 3 – 4 weeks, but some animals will be permanently blinded. Pinkeye by itself is not a fatal disease, but it may indirectly cause death if an affected animal is blinded to the extent that it is unable to find food or water. Pinkeye affects 10 million calves annually. One study showed a 17-lb. weight loss when one eye was affected and up to a 65-lb. loss when both eyes were involved.¹ This study suggests that Q pili are specific and necessary for colonization of bovine corneal epithelium. I pilienable maintenance of an established infection.²

Pinkeye is a seasonal disease, with most cases being seen in late spring, summer, and early fall. This coincides with the time of year having the most sunlight exposure. The ultraviolet light in sunlight acts on the *M. bovis* organisms to make them more virulent.

All ages of cattle can be affected by pinkeye if they have not developed immunity, but the disease is most common in calves. After an animal is infected it develops fairly solid immunity. Recovered animals may carry and shed the bacteria in their lacrimal secretions for more than one year, which explains how the disease can be carried over in a herd from year to year. First symptoms of the disease are lacrimation or tearing and light sensitivity, which progress to corneal cloudiness and corneal ulcers. In severe cases the eyeball may rupture or abscess causing complete and irreversible blindness.

Other diseases that can cause conjunctivitis, such as infectious bovine rhinotracheitis (IBR), other bacteria, and some strains of *Mycoplasma*, can be confused with pinkeye.

Other bacteria, *Moraxella ovis*, and *Moraxella bovoculi* appear to be emerging as other causes of pinkeye. These agent may co-infect the animal, along with *M. bovis*, making the disease more difficult to control. With no licensed products approved for *M. ovis*, or *M. bovoculi* consider an autogenous or custom vaccine specifically made for the affected herd.

If affected animals are detected early and treated aggressively, they will usually recover with minimal or no permanent eye damage; however, treatment is expensive and time-consuming. Animals that have had pinkeye often lag behind the rest of the herd in performance. For this reason Novartis Animal Health US, Inc. has developed **Pinkeye Shield XT4**, a bacterin that is administered to animals to aid in the prevention of the disease. Animals should receive a single 2-mL dose intramuscularly, which produces immunity against the devastating effects of pinkeye caused by *Moraxella bovis*.

Pinkeye Shield XT4 Efficacy Study Average Daily Clinical Score ³		
	Vaccinates (n=18)	Controls (n=18)
Average per Animal	1.52	4.16
Average per Eye	0.76	2.08
<i>P</i> <0.01		

Animals were observed daily for a total of 7 days. Eye lesions were graded on a scale of 0 – 6, with 0 being normal and 6 being severe lesions with blindness. **Pinkeye Shield XT4** vaccinates showed significant levels of protection following challenge with virulent *Moraxella bovis* organisms.

Footnotes

1. Animal Nutrition and Health, February 1985, Troutt and Schurig. pp. 38-41.
2. American Journal of Veterinary Research, Vol. 54, No. 2, Feb 93, Ruehl WW, Marrs CF, George L, et.al, pp. 248-253.
3. Data on file at APHIS-CVB.