



Clostri Shield® 7

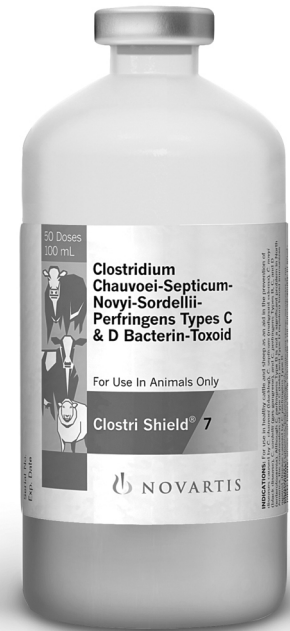
Clostridium Chauvoei-Septicum-Novyi-Sordellii-Perfringens Types C & D Bacterin-Toxoid

For use in healthy cattle and sheep as an aid in the prevention of diseases caused by *C. chauvoei* (backleg), *C. septicum* (malignant edema), *C. novyi* (black disease), *C. sordellii* (gas gangrene), and *C. perfringens* Types B, C, and D (enterotoxemia). Although *C. perfringens* Type B is not a significant problem in North America, the combination of Type C (beta) and Type D (epsilon) toxoid immunizes against disease caused by *C. perfringens* Type B.

Product Numbers

Clostri Shield® 7
#334-20 mL - 10 doses
#335-100 mL - 50 doses
#336-500 mL - 250 doses

- **BQA Friendly** — A small 2 mL dose and a SubQ-only route of administration proven to meet and exceed Beef and Dairy Quality Assurance standards.
- **Highly Efficacious** — Proven to protect against *C. chauvoei* in a lethal challenge study (see Figure 1 on back). Generated superior titer responses in comparison to other leading 7-way vaccines (see Table 1 on back).
- **Broad Spectrum** — Delivers safe and effective protection against the major clostridial pathogens in both cattle and sheep.

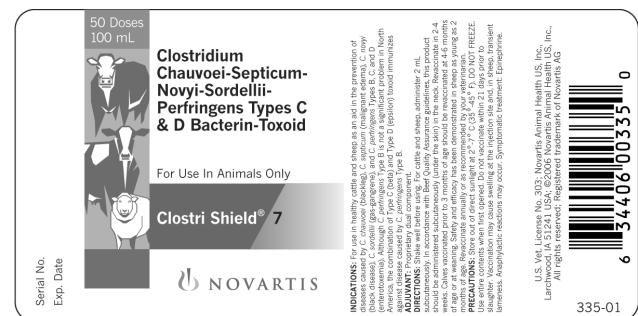


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ADJUVANT: Proprietary dual component.

DIRECTIONS: Shake well before using. For cattle and sheep, administer 2 mL subcutaneously. In accordance with Beef Quality Assurance guidelines, this product should be administered subcutaneously (under the skin) in the neck. Revaccinate in 2-4 weeks. Calves vaccinated prior to 3 months of age should be revaccinated at 4-6 months of age or at weaning. Safety and efficacy have been demonstrated in sheep as young as 2 months of age. 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 21 days prior to slaughter. Vaccination may cause swelling at the injection site and, in sheep, transient lameness. Anaphylactic reactions may occur. Symptomatic treatment: Epinephrine.



Customer Service
(800) 843-3386

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Technical disease information

Clostridium chauvoei

Clostridium chauvoei, like all of the other *Clostridium* species, produces spores that are very resistant to destruction and can remain viable in soil for many years. The disease is more prevalent in the spring and fall. Cattle pick up *C. chauvoei* (blackleg) infections by ingesting spores, which pass into the intestine and multiply. The organisms enter the blood and lymphatic circulation and are carried to various muscles, where they remain dormant until muscle damage produces conditions that allow rampant growth. They can also pick the organism up directly into open wounds. Sheep are infected in the same way as cattle. Treatment is usually impractical, since death loss is high even with treatment, and animals that do recover often show permanent damage.

Clostridium septicum

Clostridium septicum causes malignant edema, a rapidly spreading edematous swelling of subcutaneous tissues caused by toxins formed as the bacteria grow and multiply. All ages of cattle and sheep are affected, and the mortality rate is very high. Sudden death often occurs. If symptoms are observed, they include depression, anorexia, and fever.

Clostridium perfringens

Clostridium perfringens is found in soil and also in low numbers in the intestines of healthy animals. Under favorable conditions, intestinal bacteria grow rapidly and produce toxins which cause symptoms. There are five known types of *C. perfringens*: A, B, C, D, and E.

Clostridium perfringens Type B causes lamb dysentery, and can also affect calves. Symptoms include sudden death, listlessness, recumbency, abdominal pain, and a fetid diarrhea that may be blood-tinged. The mortality rate approaches 100%.

Clostridium perfringens Type C causes an acute hemorrhagic enteritis (enterotoxemia). Affected newborns are often from high producing dams. Overfeeding causes changes in the gut environment which enhance growth and toxin production. Clinical signs include sudden death, abdominal pain, depression, and central nervous system involvement (convulsion, coma). The mortality rate is high, and animals that do survive are often permanently stunted.

“Overeating disease” is caused by Type D. It is more common in sheep but more economically important in cattle, affecting both young animals and feeders. In animals switched abruptly to high concentrate rations there will be a pH drop in the rumen. Fermented grain then passes into the small intestine

allowing organisms to multiply and produce toxin. Initially there is central nervous system stimulation followed by necrosis in the brain. Clinical signs include sudden death, convulsions, posterior paralysis, coma, and diarrhea. Often tissues decompose rapidly after death.

Clostridium sordellii

Clostridium sordellii enters the body through wounds and abrasions and causes swelling of the affected area. It often causes “big head” where the head, face, and neck of rams swell up following infection of abrasions caused by butting.

Clostridium novyi

The liver is the primary site affected by *Clostridium novyi*. Disease is most common in animals over four months old. *C. novyi* enters the body by ingestion of spores which travel to the liver and lie dormant until damage produces an environment favorable to growth and toxin production. Often this damage is caused by liver fluke infestation.

Clostri Shield 7 meets all of these clostridial challenges in a safe and effective manner. As shown in Figure 1 below, vaccinated calves survived a severe *Clostridium chauvoei* challenge that was 100% fatal to non-vaccinated calves. In addition, **Clostri Shield 7** provided the greatest level of broad-spectrum response to major clostridial antigens when compared to other 7-way vaccines (see Table 1). This is likely due to **Clostri Shield 7** having less cellular debris and thus, “cleaner” antigens that better drive the immune response to deadly clostridial toxins.¹

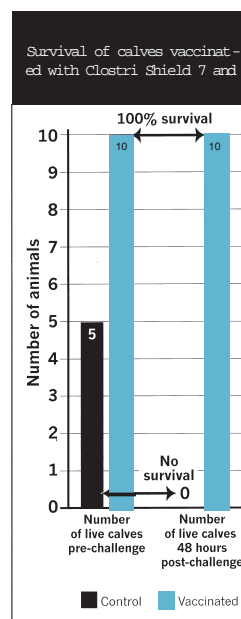


TABLE 1. Number of calves meeting or exceeding serological titer levels

Clostridial Fraction	Antitoxin level IU/mL*	Clostri Shield® 7 (2-mL dose)	Vision® 7 (2-mL dose)	UltraChoice™ 7 (2-mL dose)	Electroid® 7 (5-mL dose)
<i>Perfringens C</i>	10	10 of 10	8 of 10	8 of 10	7 of 10
<i>Perfringens D</i>	0.5	9 of 10	3 of 10	10 of 10	9 of 10
<i>Sordellii</i>	1	10 of 10	4 of 10	10 of 10	10 of 10
<i>Septicum</i>	1	8 of 10	2 of 10	5 of 10	5 of 10
<i>Novyi</i>	0.5	10 of 10	4 of 10	3 of 10	10 of 10
Total		47 of 50	21 of 50	36 of 50	41 of 50

* International Units per mL
Clostri Shield is a registered trademark of Novartis AG.
Electroid is a registered trademark of Schering Plough Animal Health Corporation.
UltraChoice is a trademark of Pfizer Inc.
Vision is a registered trademark of Intervet Inc.

1. Data on file at APHIS-CVB.

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