



Scour Bos® 4

Bovine Rota-Coronavirus Vaccine, Killed Virus

For use in healthy pregnant cattle as an aid in the prevention of disease in calves caused by bovine rotavirus and bovine coronavirus.

■ Flexible scheduling

Year 1:

- Give an initial dose of **Scour Bos 4** up to 16 weeks pre-calving
- Follow with a dose of **Scour Bos 4**, four weeks pre-calving

Year 2 and beyond:

- Give a **Scour Bos 4** booster dose 8-10 weeks pre-calving

■ Provides powerful passive protection to the calf

Calves receiving colostrums from dams vaccinated with **Scour Bos 4** showed impressive levels of protection against the major viral causes of neonatal calf scours – rotavirus and coronavirus.

■ Multiple field isolates

Scour Bos 4 contains three different rotavirus isolates including serotypes G10, G6 and G8¹

Product Numbers

Scour Bos® 4

#248 - 20 mL

#249 - 100 mL

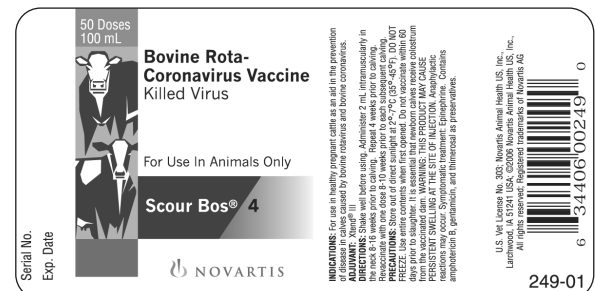


Scour Bos® 4

ADJUVANT: Xtend® III

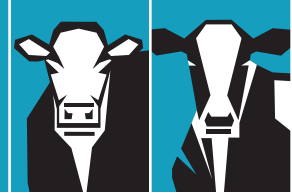
DIRECTIONS: Shake well before using. Administer 2 mL intramuscularly in the neck 8-16 weeks prior to calving. Repeat 4 weeks prior to calving. Revaccinate with one dose 8-10 weeks prior to each subsequent calving.

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. It is essential that newborn calves receive colostrum from the vaccinated dam. **WARNING: THIS PRODUCT MAY CAUSE PERSISTENT SWELLING AT THE SITE OF INJECTION.** Anaphylactic reactions may occur. Symptomatic treatment: Epinephrine. Contains amphotericin B, gentamicin and thimerosal as preservatives.



Customer Service
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Printed in the USA
4524660R, NOV07



Technical disease information

Coronavirus

Coronavirus causes one of the most severe viral diarrheas of neonatal calves. It may produce complete villus atrophy of the intestine. It is found worldwide and produces a severe diarrhea with dehydration and moderate mortality. A dual infection with rotavirus or *E. coli* can escalate the disease. Affected calves are extremely depressed but they often continue nursing. Coronavirus is also capable of infecting lung tissues and may produce respiratory signs. Calves most commonly affected with coronavirus diarrhea range in age from 5-21 days. Diarrhea usually lasts 4-5 days. Affected calves are the main source of infection to other calves, but evidence indicates that some recovered calves and cows will continue to carry virus and serve as long-term reservoirs for the virus.

Rotavirus

Bovine rotavirus diarrhea is found worldwide. Rotaviral diarrhea results from replication of the virus in villus enterocytes of the small intestine. Clinical signs range from mild to severe diarrhea which results in dehydration, depression, and sometimes death. A high incidence of rotaviruses has been detected in scouring calves on both beef and dairy farms and ranches. The disease occurs most frequently within the first two weeks of life. The severity of the disease is often worse in calves co-infected with other enteropathogens.

Rotaviruses are currently classified according to G and P serotyping (genotyping). G refers to one site on the virus' outer surface and P refers to another site. Field surveys have demonstrated that G6 and G10 are the most prevalent.² Another less common but emerging serotype is G8.

Scour Bos incorporates three unique field isolates of rotavirus. Independent genotyping of these three isolates by the University of Nebraska-Lincoln in 2003 found that the

G10, G6 and G8 serotypes are represented in **Scour Bos 4**.¹ **Scour Bos 4** is the only product in the marketplace to incorporate 3-way rotavirus.³

Efficacy of the **Scour Bos** rotavirus components has been proven in challenge of immunity studies. As noted in Table 2 below, calves from vaccinated dams withstood a mixed field challenge of G6 and G8 much better than calves that consumed colostrum from non-vaccinated dams.

Treatment

Treatment for rotavirus and coronavirus enteritis consists of maintaining hydration and electrolyte balance through the use of fluids administered either orally or intravenously. It is important to maintain calves on milk, since electrolyte fluids alone cannot supply all the nutrition a calf requires. The use of appropriate antibiotics is also employed to control secondary bacterial infections.

Prevention

Preventing viral diarrhea requires careful management of the dam, the environment, and the calf. The most important step in the program is immunization of the dam with an effective vaccine. This will result in high levels of maternal antibodies that are passed to the calf in the colostrum that it receives after birth. **Scour Bos 4** is the ideal vaccine because it provides heterologous coverage for multiple rotavirus and coronavirus serotypes. It requires two doses the first year; thereafter it requires only a single annual vaccination to the cow prior to calving.

It is vital that herds are managed to insure that all calves receive adequate levels of colostrum within the first critical hours (0-6) after birth. On severely contaminated premises, it may also be necessary for dairy calves to continue receiving milk from vaccinated cows, free of Johne's disease, until they have passed the susceptible age.

| Table 1 Coronavirus challenge results ⁴ | | | | | |
|---|-----------------------|---------------|------------------------|-----------------------|---------------------|
| Group | Geometric Mean Titers | | Dehydration Difference | Depression Difference | Clinical Difference |
| | Calf Serum | Dam Colostrum | | | |
| Vaccinates | 2.5X increase | 4X increase | p<0.01 | p<0.05 | p<0.05 |
| Controls | baseline | baseline | | | |

| Table 2 Rotavirus challenge results ⁴ | | | | | |
|---|-----------------------|---------------|------------------------|-----------------------|---------------------|
| Group | Geometric Mean Titers | | Dehydration Difference | Depression Difference | Clinical Difference |
| | Calf Serum | Dam Colostrum | | | |
| Vaccinates | 13X increase | 7X increase | p<0.01 | p<0.01 | p<0.01 |
| Controls | baseline | baseline | | | |

References:

1. Data on file at Novartis Animal Health US, Inc.
2. Snodgrass, DR, et al. 1990. Rotavirus Serotypes 6 and 10 predominate in cattle. *J Clin Microbiol.* 28:504-507
3. Based on current company labels and literature on file, Novartis Animal Health US, Inc.
4. Data on file at Novartis Animal Health US, Inc.

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