



SCOURS: CAUSES AND PREVENTION

Disease Description

While neonatal diarrhea can result from a variety of nutritional and management-related factors, the most common form of scours in calves during the first weeks of life is exposure to infectious pathogens. These pathogens, primarily bacteria and viruses, attack the lining of the calf's intestine, making it difficult for the animal to absorb essential nutrients. K99+ *E. coli* infections alone cause 30-50% of scours-related deaths in newborn calves^{1,2}. An additional 15-38% of neonatal scours mortality is associated with infections caused by coronavirus either alone or in combination with K99+ *E. coli*, rotavirus or *Cryptosporidium*². Profuse, watery diarrhea occurs, resulting in an electrolyte imbalance from the loss of those nutrients and dehydration. If severe enough, this may result in mortality. Furthermore, studies have shown calves that survive scours are more susceptible to disease and under-perform calves that did not scour in economics of future weight gain and milk production.

Causes

Bacteria: K99+ *E. coli*, *Clostridium perfringens* Type C, *Salmonella* spp.

Viruses: coronavirus, rotavirus

Parasites: cryptosporidia, coccidia

Despite your best colostrum management practices, calves still may not receive adequate protection from disease. Factors that may affect this include:

- Cow was not vaccinated
- Vaccination program was incomplete or poorly timed
- Heifers may not develop adequate immune capacity
- Colostrum quantity or quality is poor
- Difficult birth
- Calf is weak and will not drink
- Severe outbreak of scours in the herd
- Complications of mud, wet and cold weather, crowding

Prevention

Proper management of the cow, the calf and the environment all play a vital role in preventing scours. Newborn calves receive their primary protection through "passive immunity", whereby antibodies are passed from the dam to the calf through colostrum. **First Defense**[®] mimics this natural process. **First Defense**[®] should be administered within the first 12 hours of birth. Colostral antibody absorption decreases rapidly until gut-closure (approximately 24 hours of age), at which time antibodies are no longer absorbed.

Safety and Efficacy

First Defense[®] has been tested on dairy and beef calves under both laboratory and field conditions. No allergic or other adverse reactions were observed. No slaughter withdrawal is required. Clinical data is available upon request. Over 9 million calves have benefited from **First Defense**[®] since 1991.

REFERENCES:

1. Haggard, D.L. Bovine enteric colibacillosis. Vet. Clin. N. Amer. Food Animal Prac. 1:495-508, 1985.
2. House, J.A. Economic impact of rotavirus and other neonatal disease agents of animals. JAVMA 173(5):573-576, 1978.