Neonatal Calf Diarrhea

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Neonatal calf diarrhea, also known as calf scours, are caused by viruses, bacteria and parasites. It can prove to be deadly for young calves as they experience a loss of water and electrolytes through the gut and quickly dehydrate. The National Dairy Heifer Evaluation Project sponsored by The National Animal Health Monitoring System (NAHMS) in the United States reports that diarrhea accounted for 52.2 per cent of mortalities in pre-weaned calves.

It is a common experience for producers: a calf is born that seems to be healthy and strong, and develops scours within the first five days. Many producers think that they probably overfed the calf with milk or milk replacer; this is a common misunderstanding. Calves do not scour because of overfeeding, but because they have been exposed to an infectious organism.

Where did the calf get exposed? If a calf becomes sick in the first five days, infection most likely happened in the maternity pen. If calves become sick once they are more than seven days old, they were likely exposed to infection in their own environment, the calf pen.

If you are picking calves up directly from a dairy farm, ensure the source farms have clean, well-bedded calving areas.

Most Common Infectious Organisms and the Age of Diarrhea

Organism | Age of Diarrhea
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E. Coli | First 3 days
Salmonella | Day 5 – 14
Corona Virus | Day 3 – 7
Roatvirus | Day 3 – 7
Eimeria spp. (coccidiosis) | Day 7 – 4 to 6 months
Cryptosporidium parvum (parasite) | Day 5 – 7
Giardia spp. (protozoa) | Day 5 – 7
Most Common Non-Infectious Organisms

Under-feeding
Over-feeding

Selenium deficiency
Antibiotic treatment

Other oral treatments
Unknown causes

Source: Dairy and Veal Healthy Calf Conference, 2007

Scours can be the biggest problem on a farm, and early detection is the answer to beating any of these organisms. Treatment is mainly supportive, as some illnesses do not respond to medications, so the best you can do for sick calves is keep them comfortable and hydrated. Consult your veterinarian regarding the use of antibiotics.

You must not miss any milk feedings. If the calf does not want to drink, you must keep frequently offering small feedings as the calf will die without the energy it gets from milk or milk replacer, especially if it is housed in a cold location.

In addition to milk or milk replacer, it is important to offer the calf two to four litres a day of an oral electrolyte solution. This can be fed one hour after milk or milk replacer but not in combination with it as the calf is dehydrated and needs all the fluid it can get. There is also a risk combining milk replacer and electrolytes, as it can create a dangerously high sodium concentration. Calves off milk or milk replacer longer than 48 hours can become lactose intolerant as the cells producing lactase are lost.


To help to identify the signs of scours, Dr. Sheila McGuirk of the University of Wisconsin has put together Calf Health Scoring Criteria. This is an excellent resource to help score calves on sickness and to have visual aids on what you are looking for:

Calf Health Scoring Chart

Neonatal calf diarrhea:
Managing the Young Calf-Keep it Simple

Calf Disease and Prevention

NOTE: Salmonella, Campylobacter spp., Crypto sporidium spp. and E.coli are contagious to people. Please make sure you wash your hands after working with calves.