Cryptosporidium Infection in Calves...

KEY POINTS
- Cryptosporidium parvum is usually only one component of an overall syndrome causing diarrhoea in calves.
- Cryptosporidium is a zoonosis i.e. it can cause serious diarrhoea in man.
- There is no definite protocol to cure Cryptosporidium - it can only be controlled and prevented.

What is Cryptosporidium?
Cryptosporidium is a protozoan parasite similar to coccidia that is extremely common in the environment. It is becoming an important infectious agent causing diarrhoea in young, immunosuppressed mammals including man. It is prevalent worldwide. In a disease outbreak many animals contact the disease and it causes fluid and poor weight gain but with heavy burdens it can cause debility and death.

What is the life cycle of Cryptosporidium?
- Adult animals (carrier animals) excrete oocysts in low quantities in their faeces without showing clinical signs. Oocysts are like small thin walled eggs, they are resistant to many disinfectants and are very resistant in the environment.
- These oocysts infect newborn calves at or soon after birth.
- Once infected the oocysts enter the lining of the gut causing severe damage and multiplying at the same time.
- Within four days of infection, calves will start shedding vast quantities of oocysts into the environment infecting other calves in the vicinity rapidly.
- In a short period of time there is massive environmental contamination.

How do you diagnose Cryptosporidium?
Faecal analysis is the key to diagnosing cases of Cryptosporidium. At least two affected calves should be sampled ideally at around 12 days of age. Samples should be taken directly from the calf and not from the ground. Mixed infections are extremely common and significant. Cryptosporidium overlaps with Rotavirus as a cause of scour and also BVD can be blamed for suppression of the immune system thereby allowing Cryptosporidium to gain a stronger foothold in calves.

How do you treat cases of Cryptosporidium?
There is no cure or easy solution to Cryptosporidium. Cases must be treated for the symptoms that you see. Dehydrated calves must be given oral electrolytes 2-3 times per day. They must be kept warm and dry. While antibiotics have no effect on Cryptosporidium there may be a role for the use of broad spectrum antibiotics in case of a mixed infection with bacteria. Halofuginone lactate (Halocur) or Niclosamide (Flead) should be given at 2ml per 10 kg bodyweight for seven consecutive days directly after feeding or in milk. The entire group of in-contact animals should be treated at the same time to reduce oocyst shedding.

Once an outbreak has been diagnosed and calves are being treated for the disease it is also necessary to treat all newborn calves with Halocur for seven days. There may also be a role for gut protectants and probiotics in the treatment of Cryptosporidium.

How do you treat cases of Cryptosporidium?

SEAN COFFEY MVB

“Our dairy client accepted that there was no quick solution to his Cryptosporidium outbreak. He sat about treating his affected calves electrolytes, a broad spectrum antibiotic and Halocur.’’

PREVENTION IS BETTER THAN CURE...
Prevention is definitely better than cure as there is no vaccine available and there is only a moderate response to licensed medication.
- Maternal colostrum is the obvious but essential start for calves in the first hours of life.
- Equally a healthy cow that has had appropriate parasite control; that is in good body condition and that has had decent nutrition and minerals during the dry period.
- As Cryptosporidium is only part of a mixed gut infection it is important not to neglect the use of vaccines to control bacillus and viral gut infections i.e. Rotavirus, Coronavirus, Salmonella, E-coli.
- Control of BVD will reduce the severity of the scour as the calves’ immune system is better prepared for any infectious agent.

Since infective oocysts are carried in faeces it is a good idea to have cows walk, stand and lower licks relatively clean around the time of calving.

The oocysts are resistant to many commonly used disinfectants but strong ammonium based disinfectants are effective when used on a clean surface.

Oocysts will live for months in cool damp conditions but will die in dry conditions. Therefore all calving pens and calf housing should be cleaned out once calving is finished, disinfected and left to dry over the summer.

THE MAJORITY OF CALF SCOURS ARE CAUSED BY SIX ORGANISMS:
(a) Viruses: Rotavirus and Coronavirus
(b) Bacteria: E. coli and Salmonella
(c) Protozoa: Cryptosporidium and Coccidia.

Reports from the veterinary laboratories indicate that Cryptosporidium and Rotavirus are the most frequently found organisms associated with calf scour.

Once our dairy client accepted that there was no quick solution to his Cryptosporidium outbreak he sat about treating his affected calves with electrolytes, a broad spectrum antibiotic and Halocur. He initiated a protocol for newborn calves revolving around good hygiene and calving, followed by decent colostrum intake, rearing in different areas of the farm from infected calves and prophylactic treatment with Halocur from Day 0 to 7.

There were no losses but affected calves never achieved weight gain of their earlier comrades. There were reduced clinical signs in the calves born later in the calving season due to the initiated protocols.

Blanket disbacterization and drying of the calving pens took place during the summer. The farmer’s major costs were time and medicines.

IMPORTANT POINT
There is evidence that the infection rate is much higher than the rate of clinical disease.