Salmonellosis

What is Salmonellosis?

The causes of Salmonella are gram-negative bacteria belonging to the family Enterobacteriacaea. There are several strains, all of which are usually found in the gastro-intestinal tract of a variety of animals (including humans), not all of which cause disease. The two that most commonly affect UK cattle are S. Dublin and S. Typhimurium.

These organisms can attach to and invade the lining of the intestine, multiply in the host cells and can produce toxins as well as damaging the wall of the intestine.

Evidence suggests that infection is most commonly picked up by an animal from another that is shedding the organisms. This can occur with the introduction of a bought in carrier animal or by mixing, such as in transit or through a market. Infection may pass from cows to calves and vice versa.

Loose housing increases the transmission of Salmonella once an outbreak occurs along with the added problem of long-term survival of the bacteria in slurry. S. Dublin can survive up to 30 weeks in winter slurry but only short-term once spread on grass, although it can survive up to 24 weeks in soil cores.

Infection is possible from contaminated foodstuffs but this is at a very low level of incidence.

Diagnosis

Signs depend on the level of infection as acute and subacute forms are seen.
Acute infection can trigger milk drop, fever, dullness and loss of appetite as well as severe bloody, often watery diarrhoea. Death will occur in around 75% of untreated cases of adult cattle. The best form of diagnosis is stool analysis.

Subacute infection can occur without any obvious signs but abortion in these instances is common. S. Dublin is the most common cause of UK abortion.

Calves usually pick up Salmonella between the ages of 2 to 8 weeks.

Signs include fever, dullness, diarrhoea (often with blood), dehydration and, occasionally, secondary infections including pneumonia, joint-ill and meningitis. Stool analysis can be inconclusive.

Treatment

Antibiotics and fluids increase the chance of survival in both adult cattle and calves as the salmonellas usually responsible for cattle infection are sensitive. Some adults however, will become carriers even after treatment. Isolation of infected animals and excellent hygiene are essential to restrict the spread of salmonella.