Redwater in cattle

Redwater or Babesiosis is caused by the protozoan parasite Babesia. This parasite is transmitted by ticks in areas of rough grazing and infects many species of livestock. The disease is of particular economic importance among cattle and is estimated to cost Irish agriculture up to €10 million annually.

Cases of Redwater are seen during peak tick activity during the summer months when conditions are moist and temperatures rise above 10ºC. Ticks require 80 per cent humidity to prevent desiccation and therefore are found mostly at the base of dense vegetation, as found in areas of rough grazing. When an infected tick draws blood it injects the parasite Babesia into the bloodstream of the animal (Figure 1). The parasite rapidly replicates in red blood cells and causes these cells to release haemoglobin which is passed in the urine (Figure 2). The red urine is possibly the first clinical sign visible to the farmer and it is easily seen due to the colour which will clear within 24 hours.

The parasite Babesia will not survive outside the host animal and can only be transferred by a tick. The reservoir for infection is maintained on pasture by the following conditions:

- The presence of subclinical carriers in cattle, and
- The ability of the parasite to pass from one generation of ticks to the next. It is therefore interesting to note that even if cattle have not been grazing in an endemic area of pasture for some years they are still highly susceptible to developing infection once they are returned to the original land.

In endemic areas calves have a degree of immunity against Redwater for up to six months, due to maternal antibodies in the milk and age specific factors. If calves are exposed to the parasite during these early months they will acquire a natural lifelong immunity. Thus there is no need for preventative treatment in such animals. Native animals that have not been exposed to endemic areas before they reach approximately six months are however highly susceptible to infection thereafter. As a result it is vital to protect bought in stock and previously unexposed cattle introduced to endemic areas.

Clinical signs

- Initial there is an acute onset of:
  - Dullness and loss of appetite
  - Fever (>41ºC)
  - Pneumonic diarrhoea
  - Anaemia
  - Shock
  - Increased respiratory rate
  - Dark red/brown urine

After 36 hours:

- Constipation and straining
- Lowered temperature
- Possible death due to heart failure, kidney failure and anaemia

The disease can cause abortion in pregnant animals and infertility in bulls due to transient fever.

Diagnosis

- History and clinical signs.
- Microscopic examination of blood/organ smears.
- Blood testing for antibodies against Babesia.

Prevention

With early detection and proper treatment Redwater is a curable condition; however the old truism that ‘prevention is better than cure’ remains instructive.

- Farmers should consider the following prophylactic measures to ensure a healthy, productive herd:
  - Tick control
    - Acaricides can provide up to 6 weeks protection against ticks during peak tick activity. It is best to contact your local vet to advise you on the best product to use.
  - Imizol 2mls/100kg
    - Will eliminate the risk of the Babesia parasite for a maximum of 4 weeks.
- Pasture improvement
  - Drainage and reseeding of poor quality, wet land.

While Redwater disease may be fatal if not diagnosed early enough, prompt and effective treatment serves to dramatically improve the prognosis. Delay in identification of symptoms can lead to much more severe clinical signs and often death. It is of vital importance that farmers are aware of the signs and symptoms of Redwater to preserve good herd health and efficiency, particularly in areas where ticks thrive. With preventive efforts and early intervention, Redwater is a controllable threat to the wellbeing of your livestock.