

Tick fever

Peter McGregor

Manager Cattle Tick, Agriculture and Fisheries
Compliance Operations, Wollongbar

Tick fever is a serious disease in the northern parts of Australia. Of the domestic animals, it affects only cattle and buffalo. Late last century when tick fever swept through Queensland in the absence of chemical control, it was estimated that some three million cattle died. However, advances in tickicides, vaccines and drug technology now mean that tick fever can be controlled and such losses are highly unlikely to occur again.

Cause of the disease

In Australia, three different organisms cause the disease:

- *Babesia bovis*
- *Babesia bigemina*
- *Anaplasma marginale*.

Of these three, *Babesia bovis* is responsible for about 80% of the tick fever outbreaks in Australia.

The organisms are microscopic parasites which destroy the red cells in the blood, similar to the disease malaria in humans. Cattle that recover from a natural infection of tick fever carry small numbers of the parasites in their blood, sometimes for several years, and can therefore act as sources of infection for other animals.

How tick fever spreads

A vector is required to transmit the tick fever organism from one animal to another. In Australia, it is the bloodsucking cattle tick *Boophilus microplus*.

The *Babesia* parasites are taken up from an infected beast when female ticks engorge with blood. The parasites are then transferred through the tick's eggs to the larvae or 'seed ticks'. The disease is spread when these ticks

attach to a new host and subsequently infect it by injecting their saliva, which is carrying the parasites. Not all ticks become infected, nor do all larvae from these ticks become infective.

Effect of the parasites

The parasites enter red cells in the blood where they multiply, destroying many of the cells. This decreases the blood's ability to carry oxygen around the body, resulting in anaemia, fever and weakness.

Symptoms

In general, older cattle are more likely to be severely affected than young ones. Calves up to several months old may not show any signs at all.

Babesiosis

The diseases caused by the two babesias (so called babesiosis) are very similar and can only be distinguished by laboratory tests.

The first signs of illness usually occur 7–17 days after infection. The severity of the illness can range from a mild fever to one which is rapidly fatal.

Typical symptoms of the disease are as follows:

- Sudden onset of high fever up to 44°C (106°F) — often the first sign of this is that the animal isolates itself from the others and becomes uneasy and seeks shade.
- At first the membranes around the eye are bright red but over a few days turn pale, or even white, as anaemia develops.
- The animal's appetite is depressed and there is a rapid loss in condition. In dairy cows, a drop in milk production occurs at the same time as the fever develops.
- The urine is often red or brown to almost black, hence babesiosis is sometimes referred to as 'redwater'.
- Pregnant cows may abort.



An animal may die at any time from about 3 days to 4 weeks after the onset of the illness. The fever usually lasts for about a week and the course of the disease is about 3 weeks.

In animals that survive, the appetite gradually returns to normal but recovery is slow and may take weeks or even months. Treatment with specific drugs usually results in rapid recovery.

Anaplasmosis

In anaplasmosis, the incubation period is longer, usually taking around 3–6 weeks after infection for symptoms to appear. These symptoms are:

- mild fever, and anaemia, but no 'redwater';
- jaundice (yellow colouring of the membrane around the eyes), which is quite common.

Affected cattle usually do not die but may become emaciated and take months to recover.

Numbers affected

Depending on tick activity and the severity of the outbreak, numbers of animals affected can range from only one or two cattle becoming ill, to significant losses in a susceptible herd that does not receive treatment. Losses are minimised by prompt treatment with a babesia-specific drug and treatment for cattle ticks.

Reporting tick fever

Even though cattle tick infestations are detected each year in NSW, cases of tick fever are rare. The most recent cases occurred in 2005 in a herd at Old Koreelah and in two herds in the Tweed Valley. Prior to these a significant case occurred at Brindle Creek near Kyogle in 1997.

Any build-up in cattle tick numbers in an area may increase the risk of tick fever outbreaks. The chances of tick fever occurring in NSW are greater if Queensland origin cattle become infested with cattle tick.

Under the *Stock Diseases Act 1923*, tick fever is a notifiable disease. Any stock owner who suspects that an animal may be ill or may have died of tick fever should immediately report it to a Rural Lands Protection Board Ranger or District Veterinarian, NSW DPI Veterinary Officer, or Inspector of the Board of Tick Control. Following confirmation of the disease, further losses in a herd can be prevented by treatment and tick eradication. In Queensland, vaccines are also used to help control outbreaks. NSW DPI approval is required to obtain tick fever vaccine, and vaccination is restricted to animals intended for export from the state.

Further information

For further information contact your veterinarian, District Veterinarian or NSW Department of Primary Industries.

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