

# Three day sickness or bovine ephemeral fever

## What is three day sickness and where does it occur in the Northern Territory?

Bovine ephemeral fever (BEF virus), commonly known as 'three day sickness', is a viral disease of cattle and buffalo that is constantly present (endemic) in the Top End of the Northern Territory. The disease affects cattle and buffalo in the Darwin and Katherine districts and the Barkly Tableland. It has not been reported in the Alice Springs region. In the southern parts of its range, the disease appears only intermittently. Outbreaks are more pronounced when a big wet season follows several dry years, as the disease is then more likely to affect older stock that have not been previously exposed and therefore have no immunity.

Figure 1: Changes in distribution of BEF virus in Australia, 2016 to 2019

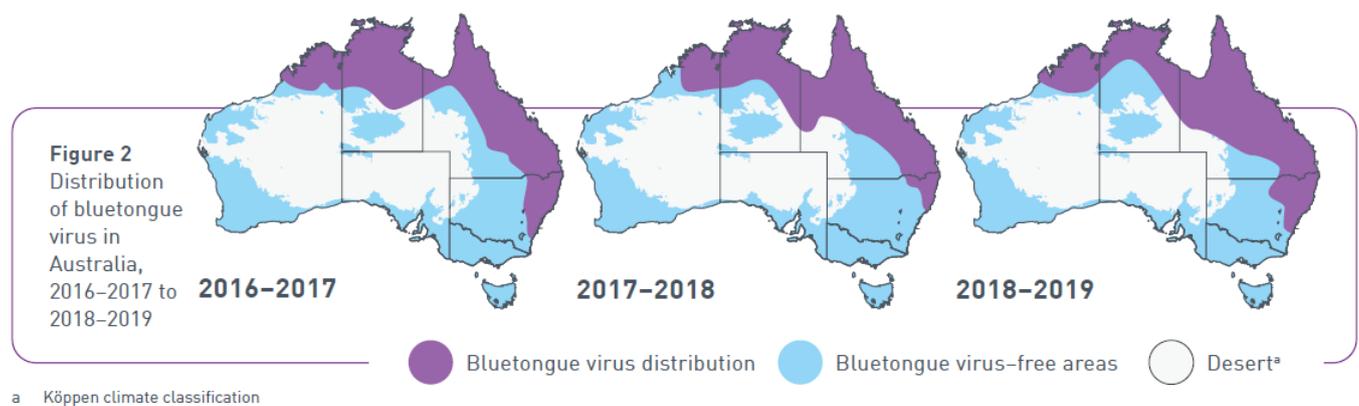


Image: [Animal Health Australia](#)

## How does it spread?

Insect vectors spread the disease. These are mosquitoes and biting midges. Season and weather conditions determine the proliferation, survival and dispersal of the insect vector population and, therefore, the distribution of the disease. It is most prevalent from the wet season, and extending into the early dry when insect numbers are high. The incubation period (time between infection and development of clinical signs) is usually about 3 days. The National Arbovirus Monitoring Program (NAMP) monitors the spread of BEF virus within Australia.

## Clinical signs

Clinical signs generally persist for about 3 days, usually followed by complete recovery, which gives rise to the name of the disease. Heavy stock, bulls in particular, may be affected more severely, while calves less than 6 months are rarely affected. The proportion of unwell animals in a herd can be high. However, mortality (death) is generally low (less than 1%).

Initially, cattle show signs associated with fever. Rectal temperature may be 40 to 41°C in the early stages of disease. Around 50% of animals will shiver, muscle tremors may be visible and animals may be lame or stiff. Joints may be swollen and lameness may shift between limbs. Affected animals may have discharge

from the nose and mouth and may drool saliva. Animals may be off food and water, which can lead to stasis of the rumen, slowing of digestion and bloating. More severely affected animals may go down, with heavy animals such as bulls and cows in good condition most affected. Prolonged recumbency can result in permanent damage to the large muscles of the limbs. The spinal cord may also be damaged permanently, resulting in chronic staggering. Pregnant cows may abort owing to high fever, and bulls may become infertile for 2 to 3 months, owing to the effects of high fever on the testes. The disease is more likely to impact reproductive rates in situations where there is an outbreak in older stock.

## Diagnosis

Diagnosis of BEF virus is based on the clinical history, examination of affected animals, and supporting laboratory evidence. BEF virus can be demonstrated in the blood of acutely affected animals (recent infection). Alternatively, paired blood samples collected first during the fever stage and again 2 weeks later may demonstrate development of antibodies to the virus. Animals develop long-lasting immunity after natural exposure to the disease.

## Treatment

Treatment of three day sickness is based around supportive care. Animals usually recover spontaneously after approximately 3 to 4 days. Ensure the animal has water and feed (although they may not drink or eat) and provide shade if possible. It is also important to have the animal resting on its brisket and not lying on one side, because lateral recumbency may lead the animal to develop lung infections and muscle inflammation. Anti-inflammatory drugs are sometimes used to relieve fever and pain. This may be indicated especially in the treatment of valuable bulls and heavy cows.

## Prevention

A vaccine is available. A course of 2 doses at a 2 to 4-week interval is required as a single dose does not provide immunity. Vaccination is most effective and lasts the longest when 2 doses are given 4 weeks apart. Immunity lasts for up to 12 months.