

Fusobacteriosis

Prevention is the best strategy

Fusobacteriosis outbreaks can cause significant disease and deaths in a herd.

The best defence against infection is to prevent the injuries that allow fusobacteria to enter the body. A modest investment in improved or upgraded facilities, including rubber floor mats in deer handling areas, may be repaid many times over through fewer stock losses and lower vet fees.

While infections in their early stages can be cured with antibiotics, the treatment of advanced infections is usually futile. It is therefore important to be aware of the signs of fusobacteriosis infection and to seek prompt veterinary advice if you suspect an outbreak. Early treatment is essential in order to minimise losses.

Foot abscesses and more

Fusobacteriosis is a bacterial disease caused by *Fusobacterium necrophorum*. The bacterium is widespread in the environment, especially in soil, and it is usually found in the intestines of deer, other livestock and humans.

The bacteria are not a problem unless they enter the body through damaged skin or mucous membranes, especially under conditions of stress.

In deer, fusobacteriosis is mostly associated with foot abscesses and lameness, but it may also cause mouth and throat lesions, stomach lesions in grain-fed animals and navel abscesses in newborn fawns.

Losses tend to be greater in fallow deer, which seem to be relatively susceptible to the disease.

Deer with cuts or abrasions on their feet or lower legs are susceptible to infection, especially in wet conditions.

Severe abrasions caused when young deer skid on concrete surfaces provide entry points for bacteria. Wet surfaces further assist penetration.

The point of entry may not always be the toe or sole. When

Key points

- Fusobacteriosis in deer is not common, but when outbreaks occur it can become widespread in the mob, causing significant disease and deaths.
- Foot abscesses are the most common sign of fusobacteriosis infection. Deer with cuts or abrasions on their feet or lower legs are most susceptible.
- Occasionally the bacteria cause mouth and throat lesions in red and fallow deer, stomach lesions in grain-fed animals and navel abscesses in newborn fawns. They also cause throat infections in humans.
- Foot abscesses can be prevented by ensuring handling facilities are designed to prevent injuries to the lower limbs and feet, by keeping facilities clean and using rubber mats in deer handling areas.
- Early fusobacteriosis infections can be cured by veterinary treatment with antibiotics. There is no preventive vaccine available.
- Infections are more common in stressed deer – following transport, yarding, weaning or bad weather.
- A few infected deer develop spinal lesions that can cause their hind legs to become partly paralysed.
- Untreated infections can be fatal. In some cases, deaths are the first sign the disease is present on the farm.

deer are forced into a yard or race, the entry point may be between the toes (for example when toes are pushed on either side of fence wire) or on the skin of the lower leg.

If deer eat excessive amounts of grain, the lining of the rumen and reticulum (the first two stomachs) can be damaged. This can result in infection and abscesses at these sites. Less common are infections of the navel of new-born calves and the mouths of fallow and sometimes red deer.

Mouth infections result from injuries to the lining of the mouth from thistles, or teething. Infections at these sites lead to swelling of the head and under the jaw, as well as an inability to suckle.

What are the signs?

When animals lag behind the herd it may be a sign that fusobacteriosis infection is present. This may be because of lameness, or because infection has moved from the site of infection to the vital organs.



Farms with deer yards that are clean and dry, with non-slip floors, tend to have fewer problems with foot abscesses

Other signs:

- Infected cuts become swollen and may ooze pus.
- Spread of infection from the skin deeper into the foot and joints.
- Partial paralysis of one or both hind legs, resulting from spinal lesions.
- Death as a result of spread of infection to the liver, lungs or kidneys. At post-mortem, these deer have abscesses at these sites.
- In a few young deer, often less than 3 months of age, the mouth can become badly infected leading to swelling of the head and/or tongue, drooling of saliva, fever and an inability to suckle or feed.
- Deer with stomach infections lose their appetite and lose weight rapidly.
- In fallow deer there can be severe ulcers in the mouths of younger animals, most commonly on the back of the tongue.

All infections lead to weight loss.

If the condition spreads to the vital organs, the deer will develop a fever, lose their appetite, develop breathing difficulties and they may die. In some cases, deaths are the first sign that the disease is present in the herd.



Pus oozes from a wound on the foot of an infected deer

Prompt veterinary post-mortem examinations of any unexplained deaths will enable the early treatment that helps minimise losses.

Diagnosis and treatment

F. necrophorum is usually the cause of foot abscesses, but your vet is likely to use lab tests to confirm the diagnosis.

Early cases of foot abscess can be saved by veterinary treatment with injectable antibiotics, together with cleansing and dressing the

affected feet. If the infection has spread to vital organs such as the liver, treatment is usually futile.

Because fusobacteriosis can cause deaths in deer that have shown no signs of lameness, any unexplained deaths should be referred to your vet, especially if the farm has previously had cases of the disease.

If several deer show signs of fusobacteriosis then your vet is likely to advise that all deer in the mob (even those without signs) are treated with antibiotics to help prevent infection spreading.

If inadequate feed or environmental factors have contributed to the outbreak, these need to be corrected.

Prevention

There are no vaccines available in New Zealand to help protect deer from fusobacteriosis.

Because the disease organism is present in the environment, prevention involves removing the factors that allow it to enter the body, and practising good hygiene in stock handling areas.

In races, gateways, yards and handling facilities:

- Remove sharp or protruding surfaces
- Remove sharp stones
- Eliminate slippery concrete surfaces
- Ensure proper drainage.

In deer handling areas, provide non-slip floors. Rubber matting has been shown to be successful in reducing the incidence of the disease on farms that have had a problem with it. Clean floors regularly to remove dirt, dung, mud and dust. Periodically clean surfaces with disinfectant.

In herds where oral infections have been a problem, spray to eliminate thistles, especially in hay paddocks.

Before transporting deer, ensure the floors of the loading race and truck are clean and intact. When deer arrive on your farm, keep them separated from the rest of the herd for a week to 10 days, to make sure none has developed lameness or any other sign of the disease.

When feeding grain, introduce deer to the grain gradually and adopt feeding strategies that help to prevent individual deer from over-eating.

Costs

Fusobacteriosis outbreaks can cause deer deaths, reduced productivity and incur veterinary fees. In addition, you will need to make management changes and invest in improved facilities to prevent further outbreaks.

Human health

In recent years, overseas medical research has shown that *F. necrophorum* can be a significant cause of acute and recurrent sore throats in humans. In most patients the early symptoms are very similar to those for 'strep throat'.

Fusobacteriosis infections respond well to treatment with antibiotics. However if left untreated, a small number of human cases may result in severe illness, particularly in young adults.

There are no proven ways to reduce the risk of human infection. But it would be sensible to reduce the amount of dust in deer yards and to practise good personal hygiene, during and after handling deer.