



Footrot in Sheep: 1. Disease Facts

Updated: March 2008

AG0445

ISSN 1329-8062

Tom Glynn, Bendigo

Ovine (sheep) footrot is a serious disease which has long been dreaded by sheep owners. It is a disease which causes severe economic loss, suffering due to lameness and disruption to normal farm operations. The economic losses result from reduced body weight and growth, decreased wool production and restrictions to marketing opportunities.

The cause

Footrot is an infectious and contagious disease caused by the bacteria, *Dichelobacter nodosus* (*D. nodosus* for short). It was previously known as *Bacteroides nodosus* and before that as *Fusiformus nodosus*. This organism may also infect goats and occasionally cattle.

The facts

Strains

D. nodosus bacteria are divided into a number of sub-groups, strains or serotypes identified by a letter of the alphabet. An outbreak of footrot may involve one or several serotypes.

Virulence

The virulence of this organism describes its ability to digest the connective tissue between the horn and flesh of the hoof, and therefore its ability to under-run the horn of the foot. The virulence varies widely between the various strains of bacteria. Bacteria of low virulence have poor ability to under-run the hoof horn and therefore, mostly affect the skin between the toes; this is **benign footrot**. **Virulent footrot** bacteria rapidly under-run and separate the hoof horn from the foot. Most bacteria fall somewhere between the **benign** and **virulent** extremes. For practical purposes the range is divided in two and each case referred to as either **Benign** or **Virulent**.

When assessing virulence by examining feet it is important to consider the environment of the sheep's foot and the time since infection occurred. See Agriculture Note: *Footrot in sheep: 5. Benign Footrot* for more.

Environment

D. nodosus requires warm, moist conditions for ideal multiplication. The bacteria can only survive away from the foot for a maximum of 7 days, even in ideal conditions. In less favourable dry conditions, the bacteria die rapidly.

Spread

Spread is primarily from foot to foot via pasture or mud. Goats, cattle and possibly vehicles can act as carriers. However moist pastures, laneways and muddy yards are the main areas where footrot is spread. Footrot will therefore spread most rapidly when it is warm and moist, as in spring and some autumns.

What kills *D. nodosus*?

Footrot bacteria are readily killed by dry heat, sunlight, cold, dry environment and a number of different chemicals. Most domestic disinfectants will destroy *D. nodosus* but are not registered or recommended for treating sheep as they are easily de-activated by dirt contamination. Zinc Sulphate, "Radicat" and formalin (Formalin, Formol) are the chemicals currently registered for the treatment of footrot in footbaths.

Immunity

Sheep that have been infected with or exposed to footrot do not develop any significant natural immunity or resistance. Short term immunity can be achieved using vaccines.

Susceptibility

All breeds of sheep and goats can contract footrot, although British breeds are less susceptible.

- Foot shape and structure affect susceptibility.
- Goats are usually less severely affected, and may exhibit different symptoms to sheep infected with the same strain of bacteria.
- Merinos are often the most susceptible and severely affected.
- Low virulence strains are most severe in Merinos but are also seen in British breeds, goats and cattle.
- There are a few strains of sheep which are resistant to footrot but at present they are of no commercial significance.

Footrot prevention and damage control

In most cases, footrot is a preventable disease. Footrot is virtually always carried into a property and flock by means of a carrier sheep or goat.

Source	Prevention
Purchase	Examine feet before buying, look for lameness and signs of treatment, footbath on arrival, isolate until sheep go through spring with no sign of footrot.
Road	Check fences, don't use for 7 days after other sheep, footbath after use if risk, stop sheep straying
Strays from neighbours	Check fences, catch and examine strays promptly, footbath and isolate infected mob if risk
Stray in neighbours	Ask neighbour not to return over fence, collect, check and footbath the stray, fix fences
Truck or saleyard	Use clean truck, footbath on arrival, isolate until sheep go through spring with no sign of footrot.

Prevention is by thorough examination, footbathing and movement control.

Damage control is minimising the effect by isolation and checking all new sheep until removed or sheep go through spring with no sign of footrot.

Introducing an infected sheep or mob is bad enough but to allow it to spread footrot to others or all mobs is disaster. Treat all new and stray sheep as risks, keep them isolated, handle and visit them last and watch them carefully.

See: Agriculture Note *Footrot in Sheep 4. Prevention and Damage Control* for more.

Footrot: the law and the community

Footrot of sheep and goats is a scheduled disease under disease control legislation. This means that:

- outbreaks of footrot must be notified to an Inspector of Livestock
- it is illegal to sell infected sheep or goats other than for slaughter
- it is illegal to place footrot infected sheep in or adjacent, to any saleyard or in any public place (including a road)
- infected sheep must be treated

- Inspectors of Livestock have the power to test and restrict movement of infected or suspect sheep and to ensure treatment is carried out.

Footrot is a disease that can affect a whole community, not only by spreading disease, but by creating unnecessary ill-feeling and even hostility between neighbours and friends. These affects can be avoided and in fact a very constructive attitude created by:

- recognising that anybody, even the best farmers, can be unfortunate enough to have their flocks contract footrot
- offering support and encouragement rather than isolation and criticism
- immediately notifying neighbours of an outbreak
- keeping neighbours and the community informed of progress with eradication
- an open, honest and caring approach; footrot is a curable disease of sheep not a communicable disease of humans
- working together as a community to solve a problem

Help

Expert advice on diagnosis, treatment and program design to quickly eradicate footrot is available from your veterinarian or DPI's Animal Health Officers or Veterinary Officers. They are waiting to help you back to normal production as quickly as possible.

Further information

Footrot in Sheep - Agriculture Notes from DPI offices -

AG0445: *Footrot in sheep: 1. Disease facts*

AG0446: *Footrot in sheep: 2. Diagnosis*

AG0447: *Footrot in sheep: 3. Treatment*

AG0448: *Footrot in sheep: 4. Prevention and damage control*

AG0190: *Footrot in sheep: 5. Benign footrot*

Beating Footrot - 39 pages, including colour photos, available from DPI offices.

Footrot the Facts - Video all about footrot, available on loan from DPI offices.

The previous version of this note was published in March 2007.

The advice provided in this publication is intended as a source of information only. Always read the label before using any of the products mentioned. The State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.