## Practical Program for Footrot Control

1. Start in advance of footrot season;
2. Examine all sheep and trim all overgrown horn;
3. Footbath all sheep and repeat once weekly;
4. Re-examine all sheep in 4 weeks, isolate and treat chronic cases; and
5. Cull sheep which are not responding to treatment

## Vaccination

The protection provided by vaccination has been greatly enhanced by recent technological advances. However, immunity is short-lived and so timing is important. The vaccine is relatively expensive and severe reactions can occur at the injection site. Vaccination is one of the most effective control measures in circumstances where eradication of footrot is not possible.

## Links

**Sheep Canada:**

www.sheepcanada.com/Footrot.pdf

**Virginia Cooperative Extension:**

www.ext.vt.edu/pubs/sheep/410-028/410-028.html

For more information, please contact your Regional Veterinarian or the Animal Health Division.

Other information pamphlets are available online from the Department of Natural Resources at:

www.nr.gov.nl.ca/agric/

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# Footrot In Sheep

## Introduction

Footrot is a highly contagious disease of sheep that can cause lameness and reduced production in infected animals. Though serious in individual animals, it becomes even more significant when a whole flock becomes affected. This pamphlet describes the disease, as well as measures, to prevent and control it. An accompanying pamphlet titled "**Construction and Operation of a Sheep Footbath**" is also available.

## Cause

Footrot is caused by infection of the deep layers of the horn of the sheep's hoof by the bacteria *Dichelobacter nodosus (*previously *Bacteroides nodosus)*.

## Symptoms and Similar Conditions

The symptoms of footrot include severe lameness in affected feet and a characteristic, foul-smelling exudate associated with the lesions. Due to its highly contagious nature, there are often many animals affected. In the first stages of the illness, animals can become lame very quickly and will lose weight and production (such as decreased milk from lactating ewes, reduced fertility, reduced wool growth and quality).

Some cases will heal on their own, but these animals become sources of infection for others in the flock as they will continue to shed the bacteria. As the bacteria cannot survive outside the sheep for more than a few days (4-14 days), infected animals become the most important cause of continued infection in a flock. Other common hoof problems in sheep include footscald and foot abscesses.

Footscald (ovine interdigital dermatitis) is an infection of the skin between the claws or toes (interdigital skin) caused by the bacteria *Fusobacterium necrophorum,* and it is characterized by a reddening of this skin without any accompanying odour. There is no involvement of the hoof, but footscald can lead to footrot due to the weakening of the defenses of the foot to infection.

Foot abscesses are another infectious condition of the hoof (caused by *Arcanobacterium pyogenes,* previously *Corynebacterium pyogenes*) where the infection goes into the deep structures of the hoof. Infection may be accompanied by swelling and a white to black pus discharge. They are not accompanied by the smell of footrot.

## Predisposing Factors

Footrot occurs more often in sheep that have poorly maintained hooves and live in dirty, wet conditions. Overgrown and under-run hooves will lead to cracking of hoof structures allowing the bacteria to penetrate into the hoof. In addition, the moist, dirty surroundings will encourage the bacteria to grow in the injured hoof. Temperatures above 10°C favour the growth of the bacteria. This leads to increased risks of infection to housed animals in the fall and to pasture animals during warm, wet conditions in the spring. Increased stocking densities, intensive rearing and housing of animals also increase the chance of infection and spread of the disease.

## Individual Treatment

The first step in curing footrot is to make sure the hoof is properly trimmed. Exposure of infected areas to the air will promote healing. In order to achieve this, aggressive trimming may be needed for some cases which can temporarily increase lameness. All overgrown and under-run horn should be removed. Infected areas then can be sprayed or painted with an antibacterial preparation. Injectable antibiotics can also help in treatment. Advice on products available, doses and administration can be obtained from your Regional Veterinarian.

## Flock Treatment

Due to the highly contagious nature of this disease, the diagnosis of a single case of footrot in a flock justifies treatment of the whole flock. In addition to the proper trimming of hooves, footbaths can help eliminate the bacteria. The construction and operation of footbaths is described in an associated pamphlet.

Solutions commonly used include 10% zinc sulphate, 5% formalin and 10% copper sulphate. Some of their advantages and disadvantages include:

***Zinc sulphate*** **-** This solution is non-toxic and non-staining but may be more expensive. Powdered or dissolved preparations are generally available from sheep supply companies, chemical companies and Regional Offices. Treatment requires at least 30 minute exposure to be effective. There is discussion about the benefit of supplemental zinc sulphate in drinking water to treat footrot; however, the results are not consistent.

***Formalin*** **-** This is the simplest to mix and use, however the solution (particularly in its concentrated form) can be very toxic when handled or breathed in. In addition, increased regulation on the transportation of the concentrated form and the consequences of spillage make it inconvenient to use. For these reasons, it is not recommended. Individuals interested in using this product should discuss it with their Regional Veterinarian.

***Copper sulphate*** **-** Effective but toxic. In addition, it can stain fleece and loses its effectiveness in footbaths when contaminated by manure and urine. For these purposes, it is not recommended.