

Controlling Lameness in Sheep

Michael Gottstein,

Sheep Specialist, Teagasc, Killarney, Co. Kerry

Lameness and controlling it is a major cost in terms of time and money expended on products to treat/prevent the condition as well as associated production losses. Apart from the cost lameness is also seen as an animal welfare issue and it has a significantly negative impact on animal performance.

There are many different reasons why sheep may become lame. Therefore, proper identification of the cause of lameness is required for treatment to succeed. Work carried out on the Teagasc BETTER farms has shown that there is a huge variation in the level of lameness / misshaped hooves and also a large variation in the causes of lameness between farms.

Common Causes of Lameness

Under Irish conditions the following are the most common causes of lameness in sheep:

- 1) Sores between the digits at the back of the foot, no smell from the sore and sheep become severely lame very quickly. This is most likely to be scald.
- 2) Hoof horn lifting, foul smell, rotting in hoof. This is most likely to be footrot.
- 3) Infection breaking out between the coronary band and the hoof. (i.e. where the hoof meets the hair on the leg. This is characterised by severe lameness and no smell. This is likely to be Contagious Ovine Digital Dermatitis (CODD)– seek Veterinary advice
- 4) Injuries and infections in the joints etc are generally characterised by swelling, heat and tenderness in the affected area.

Once the cause of lameness has been identified, a treatment /prevention programme must be put in place. The aim should be to keep the number of lame sheep at any one time below 5%. For infections caused by footrot and scald an appropriate footbath solution will control mild cases and prevent infection. Severe cases may need hoof paring and antibiotic treatment. Table 1 outlines the various footbath solutions that can be used to control these infections.

Table 1. Potential products for the control and prevention of lameness in sheep

Chemical	Concentration	Advantages	Disadvantages
Formalin	3% of 40% formaldehyde. (i.e. 300ml per 10 litres of water. Avoid higher concentrations due to risk of skin damage	<ul style="list-style-type: none"> • Sheep can walk through – fast working • Cheap • Breaks down naturally and is easily disposed 	<ul style="list-style-type: none"> • Cannot be reused after one day • Stops working if contaminated with mud, straw, faeces / organic matter • Unpleasant – irritant, toxic and carcinogenic • Very painful for lame sheep • Hoofs become hard / brittle with repeated use
Zinc Sulphate	10% (1kg per 10 litres) using Zinc Hexahydrate. 6.5% (650g per 10 litres) using Zinc Monohydrate. Add a few squirts of washing up liquid to improve horn penetration	<ul style="list-style-type: none"> • Can be reused • Not painful • Not deactivated by organic matter 	<ul style="list-style-type: none"> • Can be toxic if drunk • Can be reused • Can be difficult to dissolve • Need to stand sheep in bath • Harder to dispose off – heavy metal
Copper Sulphate	10% (1kg per 10 litres)	<ul style="list-style-type: none"> • Can be reused • Quicker to penetrate the hoof than zinc 	<ul style="list-style-type: none"> • Expensive • Can be reused • No longer recommended by SAC due to risk of copper poisoning • Reacts with galvanised metal • Colours fleece • Toxic if drunk • Difficult to dispose off
Other Organic acid zinc / copper salt mixtures	Use as directed	<ul style="list-style-type: none"> • Quick to penetrate • Some stick to feet further improving penetration 	<ul style="list-style-type: none"> • Expensive • Cannot be reused • Reduced efficacy if soiled with organic matter
Footvax Vaccine for the prevention of Footrot	Primary Course :1ml subcutaneous injection followed by a second 1ml dose six weeks later Booster Course; 1ml booster every 6 months	<ul style="list-style-type: none"> • Onset of immunity 3 weeks after primary vaccination course. 	<ul style="list-style-type: none"> • Very expensive • Only controls Footrot
Antibiotic footbaths	Use as directed by Veterinary Surgeon	<ul style="list-style-type: none"> • Useful against CODD 	<ul style="list-style-type: none"> • Very Expensive • Can not be reused • Reduced efficacy if soiled with organic matter

Note: Table adapted from Heather Stevenson, SAC Veterinary Services, SAC sheep & Beef Notes



An untrimmed hoof: a predisposing factor to footrot and lameness



Footrot in sheep



A sheep turn-over crate, installed as part of a race, is extremely useful to thoroughly examine sheep's feet and carry out any necessary trimming.



Neatly trimmed hooves. No evidence of bleeding or damage to soft tissue.

Footbathing

For footbathing to work an effective footbathing facility needs to be in place. Treatment of scald works well in walk through baths where the sheep are slowly walked through a race which contains a footbath with an appropriate solution to a dept of 5cm. The footbath should be at least 6m long and ideally the sheep should walk through a water bath prior to entering the footbath so that their hooves are cleaned.



Sheep should be slowly walked through a race which contains a footbath with an appropriate solution (Table 1) to a dept of 5cm.

Where footrot is a problem longer contact times between the feet and the footbath solution will be required. In this situation a stand-in footbath is ideal. This is a big bath that can hold 10 – 20 ewes at a time. By standing the sheep in the solution the active ingredient in the solution has a longer time to penetrate the hoof and kill any infective bacteria. Ideally the footbath should be roofed to prevent the solution from being diluted with rainwater over time. Achieving the appropriate strength of the footbath solution is an important factor in putting an appropriate control measure in place. The size of the footbath may be established by multiplying the length by width and the dept

of the solution in metres. This will give you the volume of water that the bath holds in cubic metres. One cubic metre is 1000 litres.

Post footbathing

Post footbathing it is recommended to stand sheep on a dry clean concrete surface for half an hour or so. This will allow the chemical solution to dry onto the hoofs and give prolonged protection. By allowing the sheep out of the footbath in small numbers, lame sheep or sheep with overgrown hooves can be easily identified. These sheep can then be turned and have any excess or dead hoof horn removed. It is important not to over pare feet and avoid drawing blood.

The key to managing lameness such as footrot, scald and CODD is early intervention. Frequent foot bathing coupled with prompt treatment of infected sheep will prevent infection spreading between animals. Appropriate quarantine procedures for bought in sheep are essential to prevent new infectious disease such as CODD and footrot from entering flocks that have eradicated/controlled these diseases.