



JOIN THE MARCH

to stamp out lameness on farm



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Footvax[®]
For Footrot



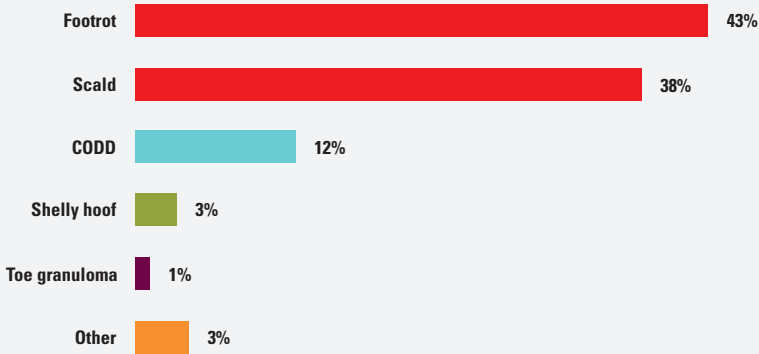
MSD
Animal Health

THE MOST COMMON CAUSES OF SHEEP LAMENESS

Sheep lameness, in particular footrot, is one of the most important health and welfare issues facing the UK sheep farmer.

Sheep lameness causes visible pain, reduces performance and costs the sheep industry millions of pounds in terms of production loss, labour, treatments and premature culling¹.

Most common causes of sheep lameness² (*Farmers Weekly Survey 2019*)



When tackling a specific disease area, there are two types of intervention that can be used either separately or combined. These interventions are split into two groups:

Preventative, which incorporates:

- Vaccination
- Management
- Biosecurity

Therapeutic, which incorporates:

- Strategic treatment
- Emergency treatment

Sheep lameness is managed most successfully by a combination of preventative and therapeutic approaches, and the Lameness Reduction Five Point Plan incorporates both.

IMPACT OF FOOTROT IN THE FLOCK

The most common cause of lameness is footrot which is an extremely painful, production-limiting disease that affects sheep of all ages.

Affected animals show:

- Impaired or reduced mobility
- Reduced wool quality and yield
- Poor reproductive performance

Footrot and scald are caused by *Dichelobacter nodosus* infection, which is carried by infected sheep and survives for up to 30 days in different soils³. This means the feet of infected sheep are the main source of infection. The Footvax vaccine stimulates immunity, which is why it can help both prevent footrot and treat it.*

*Footvax is an aid to the prevention and reduction of lesions of footrot caused by serotypes of *Dichelobacter nodosus*.



Correct diagnosis

Although footrot is the most common cause of lameness in sheep, it is easy to confuse the different lameness conditions. If in any doubt, ask your vet to help by examining some of your affected sheep.



REDUCE YOUR SHEEP LAMENESS TO 2%

The Five Point Plan⁴ was developed and extensively tested by Ruth Clements and the team at FAI Farms in Oxford. It is the agreed national strategy for achieving the Farm Animal Welfare Council (FAWC) target of reducing sheep lameness to less than 2% by the end of 2021.

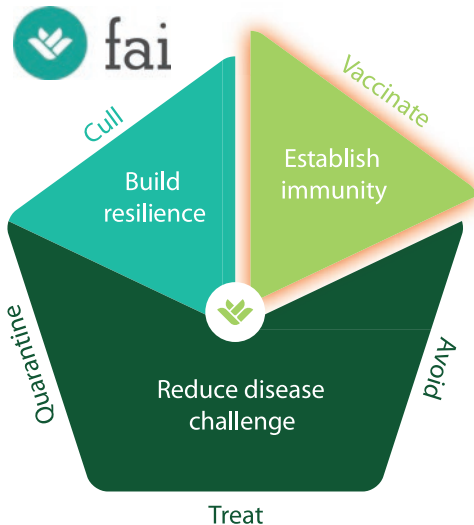
The Five Point Plan incorporates both preventative and therapeutic approaches to managing sheep lameness. The five points of the plan can be split into three objectives:

- **Vaccinate** to establish immunity
- **Cull** to build flock resilience
- **Treat, quarantine** and **avoid** to reduce the disease challenge

The Five Point Plan is a long-term management programme designed to reduce lameness in your flock. By implementing the five points in conjunction, the incidence of sheep lameness can be reduced to less than 1% from the second year onwards.

You need to make a commitment to reducing lameness at the start, but by following this approach, you should have to do less and less as lameness improves.

The Five Point Plan for lameness reduction



Vaccination is an integral part of the Five Point Plan for lameness reduction. An online video is available which gives a guide to vaccination: it can be found in the sheep health section at www.msd-animal-health-hub.co.uk/DNOMF

HOW THE FIVE POINT PLAN CAN HELP

Vaccinate animals to stimulate immunity

- Footvax vaccination forms part of a whole-flock approach to disease control, as raising flock immunity helps increase the success of the other four points in the plan
- Vaccination frequency varies, especially if you are continuously buying in stock, but should be bi-annual* to start, with the potential to reduce it to annual boosters depending on the flock disease status and/or the climatic conditions
- Dose: 1 ml by subcutaneous injection
- Vaccination programmes:
Treatment – immediately (according to guidelines highlighted in this guide)
Prevention – one month before risk period*
- Packs: 20 ml (20 doses), 50 ml (50 doses) and 250 ml (250 doses)



Avoid spreading infection at gathering and handling

- Things to consider:
 - appropriateness / practicality of foot bathing
 - investing in a mobile handling unit, if appropriate
 - improving cleanliness and drainage of handling area
 - placing gravel on the entrance to the handling facility to help prevent poaching
 - putting lime around water troughs
 - shutting gates between fields: graze one field then the next

Treat clinical cases early

- **Treating** within 3 days should be the foundation of any protocol to reduce infectious lameness, both for welfare and infection control. Discuss with your vet the appropriate treatment options. Affected animals should be isolated for monitoring and to reduce disease spread

Quarantine incoming animals

- Have a good procedure in place to separate bought-in stock for at least 4 weeks after purchase:
 - if possible, run bought-in stock through a footbath and monitor lameness
 - buy from a source which has a strict lameness protocol

Cull badly or repeatedly affected animals

- If a ewe has footrot more than once in a season she should be given a cull tag or mark to help prevent the cycle of infection – culling may be high in the first year, but will reduce dramatically as you progress

THE FIVE POINT PLAN – LAMENESS CONTROL FOR MY FARM

On-farm planner – developed in association with FAI

This planner is designed to help you reduce sheep lameness on your farm. By answering the questions in conjunction with your veterinary surgeon and / or animal health advisor, you will quickly review each of the key areas of the Five Point Plan. Use the results to discuss where you can take action and then develop a plan specific to your flock.

Questionnaire

Flock size:

Current lameness percentage:

Cost (based on estimated cost of lameness as £8.38 per ewe⁴)

Answer each of the questions in the following five sections. Score yourself one point for each question you answer YES. Scores are a guide to help identify key areas to focus on when reducing lameness, and no weighting has been applied to individual actions.

Vaccinate

Specific vaccination protocols should be tailored to each individual flock. Please ask for detailed advice from your veterinary surgeon or animal health advisor.

Action	Score
Have you identified the high-risk periods for footrot on your farm?	
Do you vaccinate in advance of the high risk periods at an appropriate time?	
Do you vaccinate ALL your ewes and rams including replacements?	
Do you ensure you use the correct dose and route by referring to the pack insert or datasheet?	
Do you transport and store your vaccine between 2°C and 8°C, and use on the day of opening?	
Total score	

Avoid

Action	Score
Do you use clean concrete in handling areas and lime / gravel / woodchip around high-traffic areas?	
Do you use a clean and dry handling system?	
Do you footbath according to manufacturers' guidelines?*** (** see note on page 8)	
Do you move mineral buckets or troughs regularly?	
Do you ensure all housing and pens are clean before and during lambing?	
Total score	

Treat

Action	Score
Do you catch and examine lame sheep within 3 days of first observing them?	
Do you mark treated sheep according to affected leg, and record ID?	
Have you had the cause(s) of lameness formally diagnosed by a vet?	
Have you stopped hoof trimming as a form of treatment for lameness?* (* see note on page 8)	
Do you use an appropriate (prescribed by your vet) antibiotic spray and / or injection within 2-3 days of diagnosing infectious causes of lameness?	
Total score	

Quarantine

Action	Score
Do you quarantine all replacements for 4 weeks?	
Do you footbath all replacements correctly?*** (** see note on page 8)	
Do you vaccinate all incoming stock for footrot?	
Do you turn and inspect all incoming stock and reject any with signs of infectious lameness or misshapen feet?	
Is all new stock bought from a known source with a low level of lameness or who are implementing the Five Point Plan?	
Total score	

Cull

Action	Score
Do you mark, spray or tag lame sheep so they can be identified later?	
Do you monitor lame ewes that have recovered for future lameness?	
Do you cull if a sheep presents as lame twice despite appropriate treatment?	
Do you cull out sheep with chronic misshapen feet?	
Are you comfortable committing to a strict culling policy in year 1 of implementing the plan?	
Total score	

THE FIVE POINT PLAN – OUTCOME

* Advice on hoof trimming

Routine foot trimming as a treatment for lameness should be avoided. It has been shown* that it:

- 1) delays healing
- 2) leads to further damage and
- 3) contributes to the spread of the disease

* References:

Winter et al (2015), *Preventative Veterinary Medicine*

Lovatt (2014), *Veterinary Ireland Journal*
FAWC (2011), *Opinion on Sheep Lameness*

** Footbathing

- Clean the feet before they enter the footbath
- Use appropriate products (seek advice)
- Give your sheep adequate time in the footbath
- Allow the sheep to stand on concrete for at least 20 minutes afterwards
- Turn out to fresh, dry pasture, not grazed for at least 2 weeks

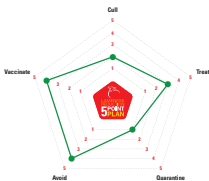
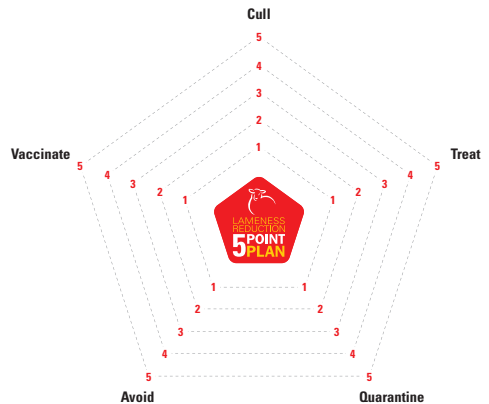
Vaccination – good practice.

- Take time to vaccinate each individual sheep correctly
- Use the correct vaccinator gun for the product you're injecting
- Sterimatic injection systems are recommended to help disinfect the needle between sheep
- Ensure you use the correct dose and route (see pack insert / datasheet)
- Use vaccine on the day of opening
- Store in a working fridge (2-8°C)

Circle your total under each heading on the pentagon.

Higher scores show that you are doing well in those areas of the Five Point Plan. Lower scores highlight the areas which you should focus on.

By covering all five points you will build your margin of safety to get lameness fully under control.



In this example (left) the outcome diagram highlights that the farmer is doing well with **avoid** and **vaccinate**, and should now focus on **quarantine**, **cull** and **treat** to get lameness under control.

STAMP OUT LAMENESS – PLAN FOR YOUR FARM

Plan how you will reduce your lameness this year.

ON-FARM ACTIONS		WHEN
Vaccinate		
Avoid		
Treat		
Quarantine		
Cull		

Build in a margin of safety

By committing to the Five Point Plan you can build in a margin of safety to ensure your flock is less likely to succumb to lameness in times of stress. The aim is to build resilience and immunity to such a level that the flock can easily withstand the usual seasonal infection challenge peaks.

SHEEP FARM CALENDAR

Sheep farm calendar		Lambing	Growing (lactation)	Pre-tupping	Pregnancy
<i>Fill in the months specific to the flock</i>		Month			
Ewes and tups	Vaccinate		Footvax?		Footvax?
Ewe lamb replacements					Footvax?
<p>Prevention – 1 month before the risk period commence vaccination with a single 1 ml dose of vaccine. Further doses of vaccine will be required according to the flock disease status and/or the climatic conditions. If, after 4-6 weeks significant levels of disease remain in the flock or climatic conditions conducive to footrot persist, administer a further dose. Otherwise delay this dose until conditions favour re-emergence of the disease. Subsequent doses should also be administered according to prevailing conditions. Do not vaccinate 4 weeks either side of lambing, or at tupping time to avoid stress. Leave a minimum of 2 weeks between vaccination with other vaccines. Do not vaccinate sheep within 6-8 weeks of shearing.</p>					
All sheep	Cull		Cull all 'repeat offenders' after 2 cases in 1 season. Cull ewes with misshapen or chronically diseased feet		
	Quarantine		Quarantine incoming stock for a minimum of 28 days. Inspect all sheep. Treat even mild cases and footbath		
	Treat	Catch, mark and treat lame ewes within 3 days	Consider footbathing lambs to control scald		Catch, mark and treat lame ewes within 3 days
	Avoid	Avoid spreading infection by ensuring housing and pens are clean prior to and during lambing	Use hydrated lime, gravel or woodchip around handling and high-traffic areas to reduce the accumulation of infection.		Ensure handling systems are as clean as possible before every use. Move mineral buckets and troughs regularly
Other flock tasks to consider when planning vaccination timing	Recording	Births, barren and deaths	Mastitis checks	Select ewes	Scanning 40-90 days
	Condition scoring (CS)			CS	CS
	Shearing				
	Worms and fluke				
	Flies, lice and scab				
<p>Please note this is a guide: consult your vet or SQP for specific advice about when to vaccinate on your farm. Footrot vaccines can cause lumps – read the datasheet and do not vaccinate sheep within 6-8 weeks of shearing.</p>					

Footvax FAQs

How do you inject Footvax?

A dose of 1 ml should be injected under the skin, on the side of the neck (2-3 inches behind the ear). Take care not to inject into muscle. We recommend the use of the MSD Animal Health 1 ml / 2 ml Subcutaneous Vaccination Pack which includes the Sterimatic system to help minimise bacterial contamination from wool and skin that can cause abscesses.

Are there any considerations during cold weather?

The vaccine contains an oil adjuvant and therefore it will aid administration in cold weather if the vaccine is gently warmed by immersion in warm water (not hot) for 3-4 minutes prior to use.

Can Footvax be given at the same time as other vaccines?

No, we recommend leaving a minimum of two weeks to allow the immune system to fully respond to one vaccine before using another.

What about other products?

When treating sheep previously vaccinated with Footvax with endoparasiticide injections, please ensure you refer to the respective product contraindications prior to use.

Can pregnant ewes be vaccinated?

Yes, but not within four weeks either side of lambing; this is to avoid stress at critical times.

Can rams be vaccinated?

Yes, all sheep in the flock should be vaccinated. You should avoid giving Footvax in the six weeks before rams are turned out with the ewes and during the mating period as any stress during this time can temporarily affect fertility.

Does Footvax cause lumps?

Yes. It is not uncommon for sheep to get a sterile lump at the site of injection but this tends to resolve over a 4-10 week period. For this reason, avoid vaccinating 6-8 weeks before shearing and discuss timing of vaccination in show sheep or breeding sheep for sale with your flock health advisor. If infection is introduced on a contaminated needle this can cause an abscess. Sterimatic injection systems are recommended to help disinfect the needle between sheep.

How many injections are needed?

Start vaccination with a single 1 ml subcutaneous injection. It is advisable to give two injections 4-6 weeks apart where there is a high incidence of footrot or, in the face of a severe outbreak, biannual revaccination* may be necessary. However, a single annual booster may be sufficient once lameness due to footrot has been successfully reduced to a very low incidence, or where there is a clear annual risk period. Timing should be 1 month before risk periods, e.g. housing*.

Presentation: Emulsion for injection containing per dose (1 ml) 10 µg pili of each of *Dichelobacter nodosus* serotypes A, B1, B2, C, D, E, F, G and H and 5 x 10⁸ cells of *D. nodosus* serotype I. 60% Light mineral oil NF and 4.5% manide oleate are added as adjuvants. 0.015 % thiomersal is added as a preservative.

Uses: For the active immunisation of sheep as an aid to the prevention of footrot and reduction of lesions of footrot caused by serotypes of *Dichelobacter nodosus*.

Dosage and administration: *Dose:* 1 ml.

Administration: *Initial course:* Two doses, 6 weeks apart by subcutaneous injection. The site for injection is on the side of the neck 2-3 inches behind the ear. Thoroughly shake the vaccine before use. As the vaccine contains an oil adjuvant it is rather viscous. It will aid administration in cold weather if the vaccine is gently warmed by immersion in warm water (not hot) for 3-4 minutes before use. Syringes and needles should be sterilised before use and the injection made through an area of clean, dry skin, taking strict precautions against contamination in order to reduce the possibility of abscess formation.

Vaccination programme: This should be tailored to meet individual flock requirements which will vary from season to season according to the actual or likely incidence of footrot. Wherever possible 'whole-flock' vaccination programmes should be adopted. By this means disease incidence in the flock will decline and subsequent disease risk from the environment will be greatly reduced.

Prevention programme: Commence vaccination with a single dose of vaccine. Further doses of vaccine will be required according to the flock disease status and / or the climatic conditions. If, after 4-6 weeks, significant levels of disease remain in the flock or climatic conditions conducive to footrot persist, administer a further dose. Otherwise delay this dose until conditions favour re-emergence of the disease. Subsequent doses should also be administered according to prevailing conditions. Thus, with severe and constant disease challenge, revaccination may be necessary at 4-5-monthly intervals; conversely under favourable conditions revaccination may be delayed until the incidence of disease challenge increases or climatic conditions worsen. It should be noted that these adverse conditions tend to occur in the UK between March and May and between October and December, thus vaccination should normally be completed shortly before these periods if problems are anticipated.

Treatment programme: A single dose of vaccine should be given to the flock immediately the disease becomes apparent. For maximum effect, treatment with Footvax should be combined with the use of a footbath and antibiotic treatment. Revaccination should be as stated in the prevention programme, which should then be continued on the farm as the key element of the overall flock foot care programme.

Contra-indications, warnings, etc: Can be used during pregnancy. Do not vaccinate sheep within 6-8 weeks of shearing. Do not use in lactating dairy sheep. Do not vaccinate ewes in the period of 4 weeks before lambing to 4 weeks after lambing. Sheep destined for show or sale should not be vaccinated within the previous 6 months because of the occurrence of a well-defined, inactive lump at the site of injection.

Adverse reactions: The vaccine may cause a reaction at the site of injection. This may range from a slight swelling from about 24 hours after injection, to a well-defined lump of about 3 cm diameter 8 days after injection. These may further increase in size to 5 or even 8 cm diameter but these swellings generally remain inactive and may resolve completely within 4-6 weeks. Frequently swellings persist for at least 10 weeks. Occasionally, however, these swellings may be large, painful and unsightly, with the formation of abscesses which may burst and discharge, particularly if any contaminating skin bacteria are introduced at the time of injection. Even so, partial or complete resolution within 10 weeks of inoculation can be expected. Reactions to second doses develop more slowly but the formation of necrotic lesions is rare. Occasionally abscesses may be noted on macroscopic examination of injection sites. Subcutaneous necrosis and inflammation may be noted on microscopic examination of injection sites. On rare occasions variable incidence of generalised lameness has been reported in vaccinated sheep. This is thought to be due to a local immunological reaction in the feet and is transitory in nature, occurring within 24 hours of vaccination and normally persisting for no more than 48 hours. Treatment is seldom necessary. Occasional hypersensitivity reactions may occur. In such cases an appropriate dose of adrenalin and / or antihistamines should be administered without delay. When the vaccine is given at twice the recommended dose a reaction similar to that described above should be expected. In some cases skin lesions with overt pus accumulation or slight necrosis develop. This necrotic skin lesion and pus accumulation occurs less frequently following a second injection. There are no adverse clinical signs in animals following treatment with 2x dose. There is no specific antidote.

Interactions: No information is available on the safety and efficacy of this vaccine when used with any other veterinary medicinal product except those mentioned above. A decision to use this vaccine before or after any other veterinary medicinal product therefore needs to be decided on a case-by-case basis.

Do not mix with any other veterinary medicinal products.

Operator warnings: *To the user:* This product contains mineral oil. Accidental injection / self-injection may result in severe pain and swelling, particularly if injected into a joint or finger, and in rare cases could result in the loss of the affected finger if prompt medical attention is not given. If you are accidentally injected with this product, seek prompt medical advice even if only a very small amount is injected and take the package leaflet with you. If pain persists for more than 12 hours after medical examination, seek medical advice again.

To the doctor: This product contains mineral oil. Even if small amounts have been injected, accidental injection with this product can cause intense swelling, which may, for example, result in ischaemic necrosis and even the loss of a digit. Expert, PROMPT surgical attention is required and may necessitate early incision and irrigation of the injected area, especially where there is involvement of finger pulp or tendon.

Withdrawal period(s): Zero days. For animal treatment only. Keep out of reach and sight of children.

Pharmaceutical precautions: Store and transport refrigerated (2°C to 8°C). Protect from light. Do not freeze. Once opened use immediately.

Disposal advice: Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with the local requirements.

Legal category: POM-VPS.

Packaging quantities: Carton with one bottle containing 20 ml, 50 ml and 250 ml.


Footvax®
For Footrot

- References:** 1. Economic Impact of Health and Welfare Issues in Beef Cattle and Sheep in England (ADAS 2013)
2. *Farmers Weekly* Sheep Lameness Survey, May 2019
3. Muzafar M, Green LE, Calvo-Bado LA *et al.* Survival of the ovine footrot pathogen *Dichelobacter nodosus* in different soils. *Anaerobe*. 2016; 38:61-7. doi:10.1016/j.anaerobe.2015.12.010
4. Clements *et al* (2014). *Veterinary Record* 10.1136/vr.102161

Footvax® contains antigens from 10 serotypes of *Dichelobacter nodosus* and is indicated for the active immunisation of sheep as an aid to the prevention of footrot and reduction of lesions of footrot. Legal category **POM-VPS**.

Further information is available from the SPC, Datasheet or package leaflet. MSD Animal Health UK Ltd, Registered office Walton Manor, Walton, Milton Keynes MK7 7AJ, UK. Registered in England & Wales no. 946942. Advice should be sought from the medicine prescriber.

Use medicines responsibly.

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