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Department of Agriculture
Government of Western Australia



ERADICATING FOOTROT FROM WESTERN AUSTRALIA

2004

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ERADICATING FOOTROT FROM WESTERN AUSTRALIA - A FARMER'S GUIDE



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ABOUT VIRULENT FOOTROT

Virulent footrot can occur on any farm in the medium to high rainfall zone. Persons who regularly buy and sell sheep take a greater risk, but even properties with a closed breeding flock are at risk from stray sheep.

People often associate footrot with properties managed by inefficient farmers. This is a false belief. Many good farmers have found the disease in their sheep, including high profile studs.

Footrot can strike anywhere and often without warning.

It is important to remember that once it is found; getting to know and understand the disease will help you to beat it. A positive attitude, careful planning and good management will be your greatest needs.

ABOUT THIS FARMER'S GUIDE

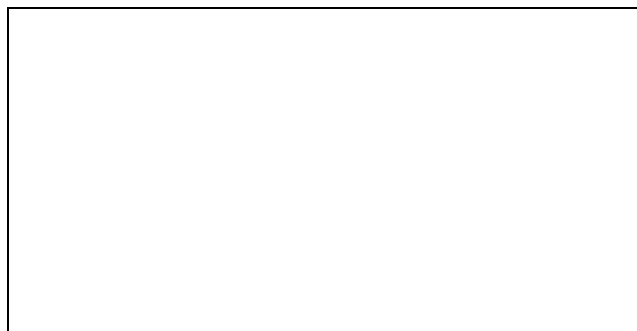
This publication has two very important objectives. Firstly, to minimise the cost and inconvenience of virulent footrot on your farm and the associated animal suffering. Secondly, to ensure the effectiveness of the State-wide effort to eradicate virulent footrot.

This farmer's guide aims to provide information you will need about footrot and to complement your contact with your stock inspector. It is vital that you work through the details of your eradication program with your stock inspector/case manager.

This farmer's footrot guide, your stock inspector/case manager and your commitment and determination, will help you eradicate footrot from your property.

When you need to discuss anything about footrot, remember to contact your case manager, local stock inspector or veterinary officer.

Contact details/business card here



Note: Mention of trade names does not imply endorsement or preference of any company's product by the Department of Agriculture, and any omission of a trade name is unintentional. Recommendations are current at the time of printing.

FOREWORD

The eradication of virulent footrot from sheep and goats in Western Australia provides an excellent example of a cooperative effort and commitment by producers, industry and government.

The Footrot Eradication Project is part of the Department of Agriculture's Animal Health program, which provides support and advice to enable individual producers and landholders to protect their livelihood and future. The program's strong regulatory focus protects the agricultural sector as a whole, particularly through its surveillance and barrier quarantine activities.

The main aims of the Footrot Eradication Project are to improve productivity, animal welfare and market access for Western Australian livestock.

Western Australia is recognised nationally for developing initiatives and new approaches to footrot which make eradication of this significant disease both feasible and achievable.

The strong support and involvement of industry (through the Agriculture Protection Board and the Footrot Eradication Campaign Advisory Committee) and government (through the Animal Health Program), has culminated in the current low number of properties in quarantine for virulent footrot.

Early detection and diagnosis of virulent footrot is essential for eradication. Awareness and understanding about virulent footrot is vital for all sheep and goat farmers about virulent footrot is vital.

Should virulent footrot be present in your sheep or goats, this guide will help you to understand the measures you will need to take to prevent the spread of the disease and how to eradicate it.

We urge you to talk to your neighbours about footrot and invite them to attend inspections so that they may learn about the disease. This will help to ensure that they do not inadvertently allow the introduction of footrot onto their properties. This will serve as an insurance for your future.

Staff from the Department of Agriculture will support your efforts to eradicate virulent footrot from your property.

We are entering a critical phase for this activity. Success can lead to complacency. It is important that cooperation and commitment by industry and government remains strong to ensure that the long term goal of total eradication of virulent footrot from WA before 2014 is achieved, with very significant progress by 2007.

Chris Richardson ,CHAIRMAN, FOOTROT ERADICATION CAMPAIGN ADVISORY COMMITTEE, and CHAIRMAN, AGRICULTURE PROTECTION BOARD

Ashley Mercy, Animal Health Manager, Department of Agriculture

LEGAL OBLIGATIONS

Regulations relating to quarantine for virulent footrot

The presence of virulent footrot on your property requires that action be taken to eradicate the disease. The following requirements of the Enzootic Disease Regulations 1970 under the Stock Diseases (Regulations) Act 1968 set out some of your responsibilities as the owner/manager of a property in quarantine for virulent footrot. Under this Act, it is an offence to fail to carry out instructions issued by the inspector.

1. A 'Permit to Move Stock' is required for each movement of sheep (or goats) **ONTO** or **OFF** the property.
2. The owner of the sheep (or goats) on the property shall:
 - (a) subject any sheep (or goats) to such treatment of footrot as an inspector may determine;
 - (b) move any of the sheep (or goats) from any part of the land to any other part of the land when requested;
 - (c) maintain any sheep (or goats) separate from other sheep or goats in any part of the land on which they are located, when required.
3. The Chief Inspector may require the owner or person in charge of sheep affected with virulent footrot to immediately remove the sheep so affected from the flock and send them to an abattoir to be slaughtered.
4. An inspector may require an owner or person in charge of a property on which sheep or goats are affected with virulent footrot:
 - (a) to maintain cattle in isolation from sheep or goats; and
 - (b) to subject any or all cattle on that land to such treatment as an Inspector may determine.
5. It is your responsibility to prevent stock from straying. If sheep do stray on or off your property, this must be reported to the stock inspector, immediately.
6. An inspector may require the person in charge of diseased or possibly diseased stock to provide relevant information such as the location of all stock under their care or management. It is an offence to fail to provide such information when asked, or to furnish false information.

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FACTS ABOUT FOOTROT

Cause

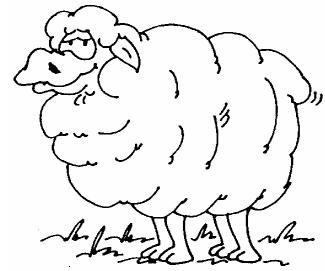
Footrot is a contagious disease of sheep and goats* caused by a mix of different bacteria with the essential one being *Dichelobacter nodosus*. The bacterial infection can cause varying degrees of damage to the horn of the foot, leading to lameness, and significant loss of body weight and wool production.

* Reference to sheep in this guide applies equally to goats.

Forms of footrot

There are two main forms of footrot - virulent and benign. These are caused by different strains of the bacterium *D. nodosus*. Footrot is diagnosed using two methods: inspecting sheep's feet, and testing skin scrapings in the laboratory.

Footrot causes fairly characteristic changes (known as lesions), such as loss of interdigital hair, increased moisture between the toes, and separation (under-running) of the horn of the foot. These changes become progressively worse in severe cases. The early stages of virulent footrot can look like benign footrot.



Virulent footrot can be distinguished from benign footrot by a laboratory test called the gelatin gel test or protease thermostability test. The test is done on bacteria grown from scrapings taken from the feet.

Tests for footrot

The gelatin gel (protease) test measures the activity of the enzyme called protease, which is produced by *D. nodosus* and which helps to destroy the soft horn and tissue of the hoof. The test exposes the protease enzyme to heat and measures whether it remains stable or becomes unstable.

Bacteria which cause virulent footrot are known as stable ('S') strains because their protease enzymes are stable when exposed to heat. Bacteria which cause benign footrot are known as unstable ('U') strains because their protease enzymes are unstable when exposed to heat.

The gelatin gel (protease) test was developed in Western Australia and is recognised nationally as the best available test to confirm the presence of virulent or benign strains of *D. nodosus*.

'S' and 'U' strains can be further categorised using another test called a zymogram. A zymogram identifies all the different types of protease enzymes which *D. nodosus* produce. Three zymogram types have been found for stable ('S') strains - S1 and the less common strains, S2, and S3.

So far, eight different zymogram types of unstable ('U') strains have been found, U1 to U8. U1 is the main type in Western Australia. The U5 type has been found in approximately one per cent of laboratory submissions and in three cases ('hot' U5 strains) have been associated with severe disease similar to virulent footrot. If this strain is isolated from sheep, the property is quarantined, further investigation is done to determine if a 'hot' U5 strain is present. If this is confirmed, the owner must eradicate the disease by the same approach used to eradicate virulent footrot.

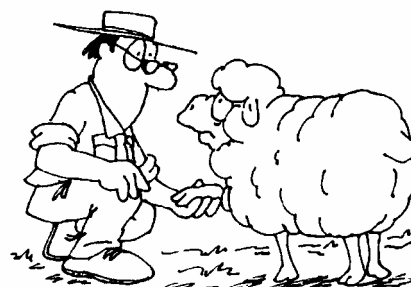
The Department of Agriculture's policy, with support of industry, is to eradicate virulent footrot from infected flocks and prevent the spread to clean flocks. This includes preventing introduction of the disease from the Eastern States.

From here on where 'virulent footrot' is mentioned is the guide, the disease caused by the rare 'hot' U5 strain is included in this phrase.

Stock inspector visit to check for virulent footrot

There may be several reasons why the stock inspector has visited your property. These include:

- Notification that your sheep may have virulent footrot.
- A neighbouring property has been quarantined for virulent footrot.
- Your sheep have been bought/moved from a property found to have virulent footrot.
- Your sheep have been sold/sent to a property now found to have virulent footrot.
- Your property has been included in a district footrot surveillance check.
- The visit is part of post quarantine surveillance.



Whatever the reason, it is important to find out if your sheep have virulent footrot. The stock inspector will check mobs and may take samples for laboratory testing.

What do I do after the stock inspector's visit?

The stock inspector/case manager must decide whether to quarantine the property immediately or to wait for laboratory results or to wait for further information (especially if a U5 strain is present). Your responsibility will differ depending on which decision is taken.

A. My property is **NOT** placed in quarantine immediately

- Confine all stock by ensuring that boundaries and internal fences are stock proof.
- Discuss any intended stock movement from the property with the stock inspector.

B. My property **IS** placed in quarantine

- Confine all stock by ensuring that boundaries and internal fences are stock proof. It is an offence under the Stock Diseases (Regulations) Act 1968 to allow stock to stray off the property.
- Obtain a 'Permit to Move' from the stock inspector/case manager **before moving any stock onto or off** the property.
- Reconsider sheep sales. The sale of sheep through saleyards is prohibited. The only options available are sale direct to an abattoir lairage or export feedlots, with the latter being up to the individual feedlot operator's discretion. Sheep which are lame or show signs of footrot will not be accepted by feedlots.
- Write down on the tracings forms (see pages 7 and 9) all stock movements for the past 12 months.
- Notify all neighbours within 3 days that virulent footrot has been diagnosed on the property and that precautions to reduce risk of spread to adjoining properties are being undertaken, such as removing known infected stock from boundary paddocks. Your stock inspector/case manager will notify your neighbours within 10 working days of confirmation of virulent footrot on your property and will arrange to check their sheep in the near future.
- Gather farm information required for planning an eradication program such as flock structure and stock movements off and on to the property.
- **Fill in the 'Sheep details by mobs' sheet on page 3.**

The Department of Agriculture will give support by:

- Providing you with information about the two main choices for eradication - destocking or a summer eradication program.
- Formally notifying neighbours that virulent footrot has been found on your property.
- Providing you with technical advice and practical demonstrations on all aspects of footrot relevant to your eradication program.
- Working with you to develop an eradication program which best suits your enterprise.
- Providing advice and training on how to carry out summer inspections. Where possible, your stock inspector will visit throughout the first summer inspection.
- Supervising progress in the eradication of virulent footrot from your property.
- Issuing 'Permits to Move' for sale and disposal of any sheep moving on or off your property.
- Maintaining regular contact with you regarding your eradication program.
- Carrying out the inspection for quarantine release.

Tracing the spread of virulent footrot

For footrot to spread from an infected sheep to an uninfected sheep, there must be sufficient numbers of the bacteria present, the host must be susceptible to infection and the environmental conditions need to be right. Footrot will only occur if the host, bacteria and environment allow the infection to establish and then for the disease to develop.

You can help reduce the spread of footrot by providing information to your stock inspector/case manager of numbers and sources of sheep brought onto and moved off your property in the past 12 months. This allows the inspector to find out where the infection has come from. If the infection is stopped at the source, the spread of footrot will be reduced.



Please fill in the form on page 7 headed 'Tracing Record Part 1. Introductions' to provide details of introduced livestock over the past 12 months.

Please fill in the form on page 9 headed 'Tracing Record Part 2. Sales' to provide details of livestock movements over the past 12 months or the period of time specified by the stock inspector/case manager.

Discuss and record any events in the past 12 months where sheep have strayed from your property or onto your property.

If you decide to undertake a summer eradication program rather than destock your property, invite your neighbours to attend an inspection. This is a good opportunity for them to learn more about the disease. Some farmers have had neighbours who have offered to help muster and yard sheep, which has reduced the cost of additional labour.

Please urgently fill in the form on page 11 headed 'Neighbour Contact Details' and fax/mail to your stock inspector/case manager, who will contact your neighbours within 10 working days and later arrange to check their stock.

When you prevent the spread of footrot to your neighbour, you increase your chances of eradicating virulent footrot from your property and reduce the chances of it being reintroduced.

Please also make a working map/sketch to show roads and reserves, where neighbour properties join, your sheep yards, paddocks and sheep mob details; indicate any known weak parts of fences, as well as creeks, soaks and other high risk spread areas.

Options available for eliminating virulent footrot

There are two options available:

(i) Destocking - by removing all sheep and goats, preferably before the autumn break and definitely within 12 months of the property being quarantined. (If not destocked by the break of season, then summer inspections must be done to remove all infected sheep)

or

(ii) Summer eradication - elimination of the infection from the flock by culling affected animals by doing at least two summer inspections of all sheep in all mobs. The summer eradication program must be successful within 27 months (two summers) of the property being placed in quarantine, after which time remaining infected mobs and direct contact mobs must be destocked.

Footrot must be eradicated from a property through a Footrot Eradication Management Plan. Deciding the right option depends on several factors. These include:

- type of sheep enterprise;
- relative contribution of sheep to total farm income;
- climatic factors;
- stock security;
- relative sheep prices for sale and replacements;
- availability and cost of suitable labour;
- evaluation of likely success of different options.



Assistance

A group which is available for help is Southern Agcare. For assessment of the financial implications in view of your footrot quarantine, telephone David Poultney on (08) 9842 2956. Family counselling is also available (see brochure).

(URGENT: FILL IN AND GIVE COPY TO YOUR STOCK INSPECTOR/CASE MANAGER)

(Attach a working map of where neighbour properties join, any know weak parts of fences, reserves, roads and location of your mobs in paddocks)

NEIGHBOUR CONTACT DETAILS

	Trading name	Contact name	Phone No.	Sheep/Cattle/Goats	Brand
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

Other comments

Were your sheep found straying in a neighbour's block? Yes/No

If yes, when? _____

If yes, where? _____

Were any neighbour's sheep found among your sheep? Yes/No

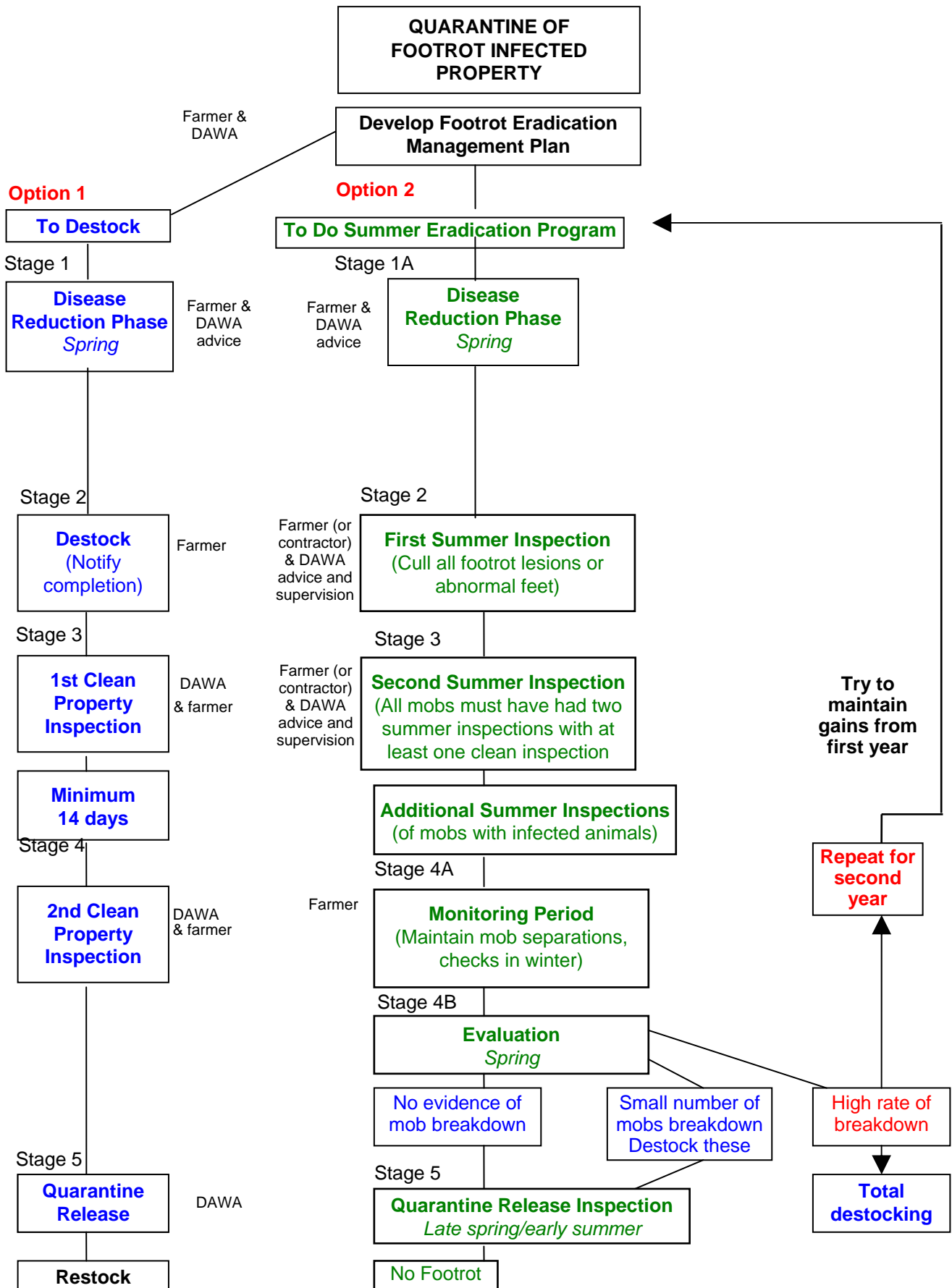
If yes, when? _____

If yes, where? _____

Please indicate using a *, which neighbours regularly trade in sheep or turn over a large number of sheep.

Do you think there is a strong possibility that the disease may have been introduced by a particular neighbour? Please indicate which one and give reasons.

ON-FARM FOOTROT ERADICATION PROCEDURES AND RESPONSIBILITIES



Permit to Move - what you need to know

When do you need a Permit?

A 'Permit to Move' is needed for **every** movement of sheep and goats **ONTO** and **OFF** a property that is quarantined for virulent footrot (See Appendix 3). Remember, a permit will not be issued if the destination is not appropriate (e.g. into lairage on a Friday).

For cattle movements, there is no legal requirement for a Permit to Move but notification to the stock inspector would be appreciated.

Why do you need a Permit?

To help prevent the spread of virulent footrot, a Permit to Move authorises the movement of stock onto and off a quarantine property. The Permit to Move allows stock to go only direct to an abattoir for immediate slaughter or to an approved export feedlot. It also alerts the livestock carrier that the truck needs to be thoroughly washed down after animals have been off loaded and reminds abattoir staff that animals must go direct into lairage. In addition, the Permit to Move is used as a record of animals entering and leaving a quarantine property.

How to get a Permit

Contact your local stock inspector/case manager to obtain a Permit to Move. Allow **AT LEAST THREE DAYS** from the day of the request until the Permit to Move is needed to give time for it to reach you by post, or by fax. Alternatively you may be able to collect the Permit to Move from the district office. In some district offices, if the stock inspector is not available, appropriate details can be supplied to the receptionist. However, the receptionist is not authorised to issue a Permit to Move. Permit to Move numbers will not generally be given over the phone. However, in exceptional circumstances, if the permit number is given over the phone, then this number must be written on the waybill. The Permit must accompany the stock



Information to have ready when requesting a permit

To save time and inconvenience, have the following information ready when requesting a Permit to Move:

- Trading name (as on Qu. Order and Brand Reg'n)
- Quarantine Order number
- Date of movement
- Name of livestock carrier
- Number, type, breed and sex of stock
- Stock brand
- Name of purchaser and destination of stock
- Name of stock agent, if used

Abattoir lairage

It is important to ensure that there is sufficient lairage space for the total consignment. Animals must not be retained in holding paddocks unless special prior permission is granted.

Can a fax be used?

A Permit to Move can be requested by sending a fax to the local district office with the above details. Also, if necessary, a copy of the Permit to Move can be faxed to you. The original will be sent in the mail.

What should you give to the livestock carrier?

When booking carrier, indicate to the carrier that you have stock which are in quarantine for footrot and that the truck must be washed out after carting quarantine stock. The livestock carrier should receive from you:

- Permit to Move
- Waybill
- Truck washing reminder card if available.

REMEMBER TO ALLOW AT LEAST THREE DAYS WHEN REQUESTING A PERMIT TO MOVE

DESTOCKING PROGRAM

General

Destocking and restocking is, in theory, the simplest and quickest solution. However, it may not be the most economical solution. It is generally not favoured by farmers with self-replacing sheep enterprises, especially if a long history of having a 'special line' of sheep.

Positive aspects of destocking include:

- Can be done at any time of the year. Should be done before the likely date of the autumn break. If this is not suitable to markets, then you will need to do summer inspections and dispose of all infected animals. **Entire property to be destocked within 12 months.**
- Minimal labour input requirements.
- Release from quarantine and restocking may be possible after two clean property inspections by a stock inspector to verify that no stock remain.
- No extra sheep handling equipment needed.
- Opportunity to change farm enterprise.
- No restrictions on sale of livestock, after the property is released and restocked. A surveillance inspection of new sheep is arranged for the next spring-summer.

Negative aspects of destocking include:

- In some cases, loss of sheep that owner considers to have special breeding value or are difficult to replace.
- There is an economic loss due to the difference in the price of sheep disposed of and cost of purchased stock.

Footrot Eradication Management Plan - Destocking

The Footrot Eradication Management Plan with an agreed date for destocking must be completed and signed by both yourself and your stock inspector/case manager. It is important to have an agreed date for destocking to be completed and a well documented plan for paddock destocking. This should specify which mobs will be destocked at specific times. Contact your stock inspector/case manager to discuss any changes to the agreed plan. Destocking should be carried out as soon as possible. Disease reduction may need to be carried out before destocking, in agreement with your stock inspector/case manager. This may be for animal welfare reasons and may require an inspection to remove affected animals.

Permit to Move

A 'Permit to Move' must be obtained from your stock inspector/case manager for all sheep leaving the property. Any stock brought onto the property before it is released from quarantine must have a 'Permit to Move' (See page 14 and Appendix 3). These animals will be destocked with all resident sheep, except by prior agreement and when separation is absolutely certain. When applying for a Permit to Move, please allow adequate time to receive the written permit by post or fax. Some abattoirs may not accept quarantine animals without a written permit accompanying the waybill.

Options

The three variations for destocking a property to eradicate virulent footrot are:

- Destocking during the non-transmission period, before the anticipated next autumn break of season (preferred).
- Destocking within 12 months (often has greater risk of footrot spread to neighbours).
- Special destocking options (stock inspector to obtain approval from Project Manager).
 - (i) Progressive destocking and concurrent restocking (if secure parts of property with separate facilities).
 - (ii) Partial destocking, then summer eradication program on remainder.

STAGES

Stage 1 - Disease reduction (control) phase

This basically involves footbathing severely affected mobs to reduce the number of severe lesions in infected animals and to help improve market value of stock to be sold (see page 22).

Stage 2 - Destock

Destocking involves all sheep being sold direct to slaughter or selling non-lame wethers direct to an approved feedlot for overseas export. Sheep can **NOT** be sold through saleyards or to other producers. Severely affected animals should not be sent for slaughter if stress and suffering are likely to occur during transit. These animals should be disposed of humanely on the farm. Lame animals will not be accepted by export feedlots. Your stock inspector/case manager has a list of export feedlots which will accept sheep from properties quarantined for virulent footrot.

Stage 3 - First clean property inspection

The stock inspector/case manager will visit soon after you have notified completion of the destocking and, accompanied by you, will undertake a full property inspection to check that all paddocks are clear of sheep.

Stage 4 - Second clean property inspection

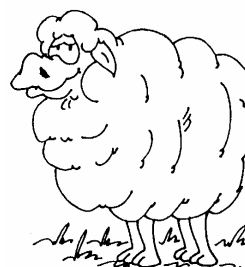
A second complete property inspection is carried out by the stock inspector/case manager after 14 days has elapsed from the first clean property inspection.

Stage 5 - Release from quarantine

After the stock inspector/case manager has carried out the second property inspection and has verified that no sheep remain, a quarantine release will then be issued. Restocking may then be carried out. Try to buy from as few sources as possible and buy direct from properties rather than from a saleyard. A vendor declaration is also useful - see Appendix 7. (See Appendix 4 for more information on preventing reintroduction of virulent footrot.)

GOLDEN RULES FOR DESTOCKING

- Stay committed and motivated.
- Follow every detail of the eradication management plan.
- Have regular contact with your stock inspector for advice.
- Once the decision to destock is made, carry it out as soon as possible.
- Make sure all paddocks have been check mustered after destocking.
- Talk to your neighbours openly about your destocking program and arrange for upgrade of boundary fences.
- Ensure no sheep/goats leave the property without a 'Permit to Move'.
- Choose the source of your replacement stock carefully and investigate the risk of introducing footrot. Ask that a footrot vendor declaration be used (see Appendix 7) to give reassurance.
- Carefully examine sheep which are purchased to restock. (Some farmers have bought in footrot-infected sheep.)



COSTS

Use the following as a guide to help work through some of the costs for destocking. The final figure may be an under-estimate of the true costs. This example was prepared by Eileen O'Neill (Stock Inspector), Katanning.

EXAMPLE ONLY: Destocking Program for 2500 sheep

My
figure
-

Income

Ewes	990 hd	@	\$40.00/hd	\$39,600	
Shipping wethers	542 hd	@	\$50.00/hd	\$27,100	
Hoggets	445 hd	@	\$45.00/hd	\$20,025	
Weaners	460 hd	@	\$45.00/hd	\$20,700	
Rams	24 hd	@	\$40.00/hd	\$960	
Mixture - pet food	31 hd	@	\$10.00/hd	\$310	
NCV	8 hd	@	\$0.00/hd	\$0	
Total income	2500 hd	@	\$43.48/hd(av)	\$108,695	

Expenses

Transport	2500 hd	@	\$1.00/hd	\$2,500	
Footbathing	500 hd	@	\$0.50/hd	\$250	
Feedlotting	500 hd	@	\$3.00/hd	\$1,500	
Total expenses				\$4,250	

Destocking income

\$104,445

Restocking

Expenses

Ewes	1000 hd	@	45.00/hd	\$45,000	
Shipping wethers	550 hd	@	\$50.00/hd	\$27,500	
Hoggets	450 hd	@	\$50.00/hd	\$22,500	
Weaners	480 hd	@	\$50.00/hd	\$24,000	
Rams	20 hd	@	\$500/hd	\$10,000	
Transport	2500 hd	@	\$1.00/hd	\$2,500	

Total expenses

\$131,500

RESTOCKING COSTS

\$131,500

NETT TOTAL COSTS of destock and restock

\$27,055

Average cost (per sheep)

\$10.82

FOOTROT ERADICATION MANAGEMENT PLAN

Destocking Program

Trading name: _____ Owner name: _____

Quarantine number: _____ Date of quarantine: _____

This Footrot Eradication Management Plan is very important, as it contains details of your specific on-farm program to eradicate virulent footrot by destocking your property. A copy of this plan, including attachments will be kept on file at the district office.

The Quarantine order and accompanying letter specify your legal responsibilities.

Stage 1 - Disease Reduction

Footbathing will/won't be carried out during the spread period as part of the disease reduction phase. Details of which mobs and dates for footbathing are attached.

Stage 2 - Destock

All sheep will be destocked and the stock inspector/case manager notified before each movement for issue of a 'Permit to Move'. The property will not be restocked until two clean property inspections have been carried out by the stock inspector, the second one at least two weeks after destocking.

Proposed dates of destocking: Start: _____ Finish: _____

Stage 3 - First clean property inspection

The stock inspector (accompanied by the farmer) will undertake a full property inspection soon after destocking is completed, to ensure that no sheep remain.

Stage 4 - Second clean property inspection

The stock inspector will carry out a second complete property inspection no less than 14 days after the first clean property inspection. No sheep are to be brought onto the property until the second clean property inspection is done.

Stage 5 - Release inspection

After the second clean property inspection is completed, the property will be released from quarantine and neighbours notified

Agreement

Both parties agree to carry out the program detailed above and any deviations from the management plan will require consultation between the owner and the stock inspector responsible.

Signature of owner: _____ Date: __ / __ / __

Signature of stock inspector/case manager: _____ Date: __ / __ / __

District Office: _____

SUMMER ERADICATION PROGRAM

General

Since 1 November 1997 all properties in quarantine have a maximum of two summers (27 months) to eradicate the disease. **After two years of a summer eradication program, any remaining infected mobs and contact sheep must be destocked.**

Positive aspects of a summer eradication program include:

- If successful, can retain original bloodline of sheep.
- You will get to know more about footrot and how to prevent it.
- It may cost less than destocking, depending on how long it takes to eradicate.
- Generally more than 50 per cent of farmers each year who attempt summer eradication are successful and are released from quarantine in the following spring.
- Even if not successful in all mobs in the first year, you can maintain the gains already made with careful segregation and management in the next year.

Negative aspects of a summer eradication program include:

- Unable to sell sheep on open market until successful eradication.
- Impact of footrot on production until eradication is successful.
- Time spent on mustering, inspections and attention to stock security.
- Work on footrot procedures may interfere with other farm work.
- Extra costs of purchasing additional sheep handling equipment.
- Hire of labour for inspections and mustering.
- Costs of repair or construction of fencing to quarantine standards.
- Costs associated with premature sale of cull sheep such as prem shearing.
- Reduced value and premature sale of culls which must be disposed of.
- Need to run cattle and sheep in isolation.
- Emotional and physical stress and possible strained relationship with neighbours.

The ultimate decision depends on the individual manager placing values on his/her own time and inconvenience, as well as the type and cost of resources involved in the enterprise. **A summer eradication program involves a considerable amount of time and effort.**

Footrot Eradication Management Plan

The Footrot Eradication Management Plan is an essential statement of planning and commitment of the involved parties. It provides a framework for a successful and smoothly run eradication program.

The plan basically consists of a series of statements of when and how activities will be carried out. This ensures that what was agreed to will be undertaken. Changes can be made, provided that the stock inspector/case manager is contacted **first** and the modification(s) agreed, to ensure that the eradication program won't be jeopardised. If prior consultation is not made, release from quarantine may be delayed for another 12 months.

It is usual for the farmer and stock inspector/case manager to sign and date the Footrot Eradication Management Plan. Having a management calendar which summarises what needs to be done can also be very useful as a reminder of action required. If the owner/manager refuses to sign a plan, one will still be issued as an instruction as part of the requirement to achieve eradication.

Stages

- Stage 1 - Disease reduction (control) phase
- Stage 2 - First summer inspection
- Stage 3 - Second and additional summer inspections
- Stage 4 - Monitoring period (after second summer inspection to quarantine release inspection)
- Stage 5 - Quarantine release inspection

Stage 1. Disease reduction (control) phase

If footrot is diagnosed on your property early in the year, it could be several weeks or even months before your summer eradication program can be undertaken.

Disease reduction basically involves footbathing the worst affected mobs and will:

- reduce animal pain and suffering;
- reduce the spread between animals on the property;
- reduce the number of severe lesions in infected animals;
- minimise the risk of spread of the disease to neighbouring properties.

Good moisture levels and moderate temperatures during winter and spring provide ideal conditions for the footrot bacteria to spread to other sheep, as well as encouraging already infected feet to develop very severe lesions. Late winter and spring is generally considered the main 'footrot-spread' period. Footbathing at this time will not eliminate the footrot bacteria from all animals but will improve the condition of animals likely to be culled at the first summer inspection.

Footbathing technique (see details in Appendix 5)

Footbathing (especially the five day method) usually results in a good clinical response. However, it can't be relied on to provide 100 per cent eradication of *D. nodosus* under field conditions and a full prior inspection to take out any sheep with score 2 or higher lesions is essential. The policy of the Department of Agriculture is that generally footbathing will be allowed for disease reduction purposes during winter and early spring. Approval from the Footrot Project Manager is required for disease reduction footbathing at other times of the year (except for red markers prior to immediate sale for slaughter).

Method for disease reduction footbathing

- Stand sheep in footbath for the time recommended by the manufacturer of the product. It should be noted that Department of Agriculture trials in Western Australia have shown that 17 per cent zinc sulphate solutions (heptahydrate) performs similarly to other registered footbathing products. The labels state that sheep should be stood in the bath for 1 hour. However, some farmers have tried 10 minutes of footbathing and found that reasonable disease reduction was achieved.
- Efficiency of disease reduction can be improved by first foot paring to expose any pockets of infection and removal of excess horn growth.
- Repeat treatment at 2-3 weekly intervals if required, providing the first summer inspection of feet is not within six weeks.
- Alternatively, footbath each day for five days for ten minutes or 5 times over 10 days. (See Appendix 5)

Footbathing **MUST NOT** occur within six weeks of the first summer inspection as the drying action of zinc sulphate may dry up lesions making them difficult to detect, and increases the chances of missing an infected animal.

Stage 2. First summer inspection

Preparation for the first summer inspection starts at least two weeks before the agreed date of that inspection. Where possible, it is desirable to have selected paddocks destocked for 14 days to allow inspected 'clean' sheep to be returned to 'clean' paddocks.

The first summer inspection should be done about two weeks after annual pastures have dried off. There should be no footbathing within six weeks prior to this inspection. Your stock inspector/case manager will provide advice and assistance for you to recognise the ABNORMAL foot and to pare it correctly. All sheep must be examined, with paring carried out to restore the normal shape of the hoof.

Owners of infected properties have two options for carrying out this inspection. These are:

- (i) Doing the inspection themselves, with Department of Agriculture guidance/instruction/supervision, or
- (ii) Employing a certified footrot contractor. Your stock inspector/case manager can supply you with a list of names and contact numbers of certified footrot contractors.

DISEASE REDUCTION FOOTBATHING AT THE FIRST SUMMER INSPECTION MUST NOT BE DONE

Attention to detail and keeping records

A complete muster of every mob on the property must be carried out. If one infected animal is missed, it could result in footrot remaining on the property.

Make sure each mob inspected has an accurate tally in and out of the yards and the number of rejects for footrot, as well as number of animals culled for other reasons is recorded, together with the paddocks the sheep have come from and the paddocks they are being placed into. Send a copy of the 'Inspection record' (See page 29) to the stock inspector/case manager within 3 days of finishing the inspection.

Where possible, sheep should be set stocked in their paddocks between the first and second summer inspections. This information should be entered onto a map of the property. It is essential that these records be kept so that the prevalence of the disease within the flock can be monitored.

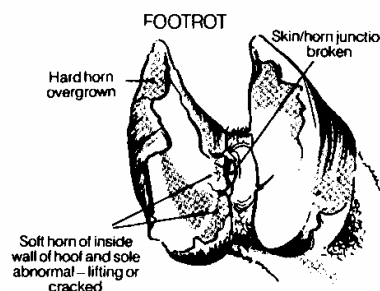
Inspection procedure

1. Put 'clean' mobs through the yards first or use temporary yards to ensure mobs remain isolated.
2. Always inspect feet in good light, preferably outside.
3. Achieve 100 per cent muster of each flock. Muster the flock the evening before the inspection so that:
 - sheep can empty out in the holding paddock; and
 - the paddock can be checked the following morning to ensure a complete muster.
4. Try to ensure that when sheep are moved from the holding paddock to stock yards or shearing shed for inspection, that their feet are as clean and dry as is practically possible. If feet are wet and dirty, inspection should not proceed.
5. Ensure adequate labour has been organised so that sheep are presented for inspection with minimal interruption. Give specific jobs to individuals.
6. Check yards and fences so that eradication measures can be effective.
Set up yards to hold infected sheep which are to be disposed of. Re-organise gates or sub-divide holding pens if this is needed.

7. Adopt a standard inspection routine such as starting with the left front foot and finishing with the right hind foot. Do not go from one foot to another in a different order, as this greatly increases the chances of missing one foot.
8. Use the following criteria to identify animals which should be culled. Use a red colour to mark these animals ('red markers'). The signs to look for when making a decision on whether to cull or not include evidence of moisture between the toes, presence of foot abscess, ridging of horn of the hoof, presence of grass seeds and abnormal shape of the hoof. For more details see Appendix 2. All 'clean' sheep must be marked with a contrasting colour (e.g. blue or green).
9. Accurately record individual flock numbers, date of inspection, number culled for footrot, number culled for other reasons and general comments relating to a particular mob. This information is vital and will be required by the stock inspector (see pages 29 & 31).
10. Getting the job done in the shortest period of time may **reduce** the chances of success. Stop inspection if the light is bad or if the sheep feet are very wet or dirty.
11. Cull infected and suspect infected sheep and send direct to the abattoir or approved export feedlot after the inspection is completed. Remember to get a 'Permit to Move' from your stock inspector/case manager before movement (See Appendix 3). Export feedlots will not accept lame sheep.

Footparing technique

1. If you are fairly sure the mob has virulent footrot, cull any suspect animal out instead of wasting time paring. However, if virulent footrot is not likely in a particular mob, you may need to pare feet to confirm no lesions are hidden.
2. Any feet with an abnormal change of the skin between the toes or of the horn material must be pared.
3. Make sure your secateurs are properly sharpened and maintained. Disinfect secateurs after paring feet from infected or suspect infected sheep.
4. Always start the cut, if possible, from the heel area as this part is generally softer than the hard, overgrown horn that grows out from the toe.
5. Avoid cutting so deep as to draw blood. Sometimes this cannot be avoided when investigating a suspicious crack. Blood should not be drawn if paring is being done to restore the normal shape to the foot. Cutting so deep as to expose the blood vessels is very painful and may lead to infection entering the hoof. If feet bleed you will not see what you are looking for.



Stage 3. Second and additional summer inspections

All mobs must undergo at least two summer inspections and at least one has to be clean, i.e. no footrot found. Second and additional summer inspections are basically a repeat of the first summer inspection, usually carried out four to six weeks after the previous summer inspection. Footbathing is not recommended at this stage.

Aim to put the mobs found to be clean at the first inspection through first, and ensure a 100 per cent muster is achieved. Use the 'Inspection record' on page 31 to record mob details.

Evaluation of summer inspections

The summer inspection part of the eradication program has been completed if no footrot is found during the second summer inspection carried out by the farmer or contractor.

If infection is found at the second summer inspection, further inspections should be carried out until no evidence of footrot exists in the flock. However, the property still remains in quarantine until spring, when a full flock inspection is done by the stock inspector to ensure that footrot has been eradicated.

If many mobs are still infected at the second summer inspection, the stock inspector/case manager will re-assess the Footrot Eradication Management Plan with you. A further summer inspection may be carried out, or destocking of infected mobs could be reconsidered.

Stage 4. Monitoring period

This covers the period between the last summer inspection and the spring release inspection. The main points to remember are:

- Maintain vigilance and check for signs of footrot.
- **Do not mix mobs** and keep records of mob movements during the year (paddock to paddock). (This is very important during winter and spring when there is a high risk of disease spread. Discuss precautions before weaning to avoid mixing mobs.)
- Allow a break of at least one week between mobs using common areas (laneways and yards). Or use portable yards.
- A 'Permit to Move' is required before **any** sheep can be introduced.
- Liaise with Department of Agriculture staff.

Early detection of footrot will allow better control of spread of the disease. Properties which have failed to eradicate but have maintained separate mobs have restricted the breakdown to one or two mobs which has greatly reduced costs in the following year. Farmers should be vigilant for any breakdown. Where possible, a pre-release check of highest risk mobs will be done by your stock inspector/case manager, involving checking some sheep from those mobs. **No footbathing is permitted within three months of a release inspection**

Stage 5. Inspection for release from quarantine

In late spring, after the flock has been through a warm, moist spread and expression period, all feet of all sheep will be examined by Department of Agriculture staff. If found to be clean, release from quarantine will follow. You will need to provide labour (at least two people per inspector) to muster, yard and present sheep for inspection. The inspector will provide his/her own equipment including secateurs and disinfectant.

Any mobs found to have virulent footrot at the release inspection following the second year of summer inspections will have to be destocked. The rest of the flock must go through another summer program to achieve complete eradication and allow the property to be released from quarantine.

GOLDEN RULES FOR SUMMER ERADICATION PROGRAM

- Have a positive and determined attitude to beat the disease.
- Ensure that the Footrot Eradication Management Plan is carried out.
- Check that boundary fences remain stock proof.
- Remove suspect disease carriers from the first summer inspection promptly.
- Don't leave the second and additional summer inspections too late, in case the season breaks early.
- Aim to get at least one clean inspection for each mob and so allow time for a third inspection for some mobs before the break, if needed.
- Keep mob mixing to an absolute minimum during the eradication program.

Costs

Use the following as a guide to help work through some of the costs for a summer eradication program. The final figure may be an under-estimate of the true costs. This example prepared by Eileen O'Neill (Stock Inspector). Year 1 - 10 per cent cull rate used. GST not included

EXAMPLE ONLY: YR 1 - 2500 hd

					My Figures
Ewes	100 hd	@	\$40.00/hd	\$4,000	
Shipping wethers	50 hd	@	\$50.00/hd	\$2,500	
Hoggets	42 hd	@	\$4500/hd	\$1,890	
Weaners	43 hd	@	\$45.00/hd	\$1,935	
Rams	2 hd	@	\$40.00/hd	\$80	
NCV	13 hd	@	\$0.00/hd	\$0	
Total income	250 hd	@	\$ 41.62/hd	\$ 10,405	<hr/> <hr/>

Expenses

Sell Stock

Transport	237 hd	@	\$1.50/hd	\$355
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Buy Stock (or defer until out of quarantine)

Ewes	150 hd	@	\$45.00/hd	\$6,750
Wethers	99 hd	@	\$50.00/hd	\$4,950
Rams	1 hd	@	\$500/hd	\$500
(Average cost per head	250 hd	@	\$48.80/hd)	
Transport	250 hd	@	\$1.50/hd	\$375

Disease Reduction

Footbath troughs	4 troughs	@	\$150/trough	\$600
Zinc sulphate	2250 hd	@	\$0.10/hd	\$225
Disinfectant	2 L	@	\$11.00/L	\$22
Spraymark	5 cans	@	\$7.70/can	\$38
Foot shears	1 pair	@	\$66.00 ea	\$66

Stock Security

Fencing	1.5 km	@	\$1400/km	\$2,100
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Hired Labour

Disease reduction	3 day	3 people	\$25/hr	\$1,800
First summer inspection	2.5 days	3	\$25/hr	\$1,500
Second summer inspection	2.5 days	3	\$25/hr	\$1,500
Release inspection	2.5 day	3	\$25/hr	\$1,500

Total Expenses				\$ 22,282	<hr/>
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ERADICATION TOTAL COSTS (Year 1)				\$ 11,877	<hr/>
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Average cost (per sheep)				\$ 4.75	
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The investment in time and money shown in this example does not guarantee footrot eradication from all mobs.

Costs not included

- Genetic losses.
- Loss of production.
- Extra management costs.
- All sheep sales are restricted to abattoirs or live sheep exports.
- Extra sheep handling equipment and farmer's labour.

EXAMPLE ONLY: YR 2 - 2500 hd**My
Figures****Income (5% culling rate)**

Ewes	48 hd	@	\$ 40.00/hd	\$1,920	
Shipping wethers	25 hd	@	\$ 50.00/hd	\$1,250	
Hoggets	21 hd	@	\$ 45.00/hd	\$945	
Weaners	20 hd	@	\$ 45.00/hd	\$900	
Rams	1 hd	@	\$ 40.00/hd	\$40	
NCV	10 hd	@	\$0.00/hd	\$0	
Total income	125 hd	@	\$ 40.44/hd	\$ 5,055	<hr/> <hr/>

Expenses**Sell Stock**

Transport	125 hd	@	\$1.00/hd	\$125	
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Buy Stock

Ewes	60 hd	@	\$45.00/hd	\$2,700	
Wethers	25 hd	@	\$50.00/hd	\$1,250	
Weaners	49 hd	@	\$45.00/hd	\$2,205	
Rams	1 hd	@	\$500/hd	\$500	
(average)	125 hd	@	\$53.24/hd)		
Transport	125 hd	@	\$1.00/hd	\$125	

Inspections

Footbath troughs	0 troughs	@	\$150/trough	\$0	
Zinc sulphate	2375 hd	@	\$0.10/hd	\$237	
Disinfectant	2 L	@	\$11.00/L	\$22	
Spraymark	5 cans	@	\$7.70/can	\$38	
Foot shears	0 pair	@	\$55.00 ea	\$0	

Stock Security

Fencing	0 km	@	\$1400/km	\$0	
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Hired Labour

First summer inspection	2.5 days	3	\$25/hr	\$1,500	
Second summer inspection	2.5 days	3	\$25/hr	\$1,500	
Release inspection	2.5 day	3	\$25/hr	\$1,500	

TOTAL EXPENSES **\$ 11702**

ERADICATION GROSS COSTS (Year 2) **\$ 6647**

Average costs (per sheep) **\$ 2.66**

ERADICATION GROSS COSTS (Years 1 & 2) **\$ 18,524**

Over 2 years average costs (per sheep) **\$ 7.41**

The investment in time and money shown in this example does not guarantee footrot eradication from all mobs.

Costs not included

- Genetic losses
- Extra management costs
- All sheep sales are restricted to abattoirs, live sheep exports or special feedlots.
- Farmer's labour.
- Loss of production
- Extra sheep handling equipment.

FOOTROT ERADICATION MANAGEMENT PLAN

Summer Eradication Program

Trading name: _____ Owner name: _____

Quarantine number: _____ Date of quarantine: _____

This Footrot Eradication Management Plan is very important, as it contains details of your specific on-farm program to eradicate virulent footrot by a summer eradication program within 27 months. A copy of this plan, including attachments will be kept on file at the district office.

The Quarantine Order and accompanying letter specify the terms of reference.

Stage 1 - Disease reduction (*circle appropriate words*)

Footbathing will/won't be carried out during the spread period as part of the disease reduction phase. Details of mobs and dates for footbathing are attached.

Footbathing will not be carried out within six weeks of the first summer inspection.

Partial Destocking-the culling of sheep and or mobs with underrunning lesions will/won't be carried out before the first summer inspection, to minimise the prevalence, prevent spread and reduce pain and suffering of lame sheep.

Stage 2 - First summer inspection

The first summer inspection is the responsibility of the owner and may be carried out by the owner, or a certified footrot contractor employed by the owner.

Proposed dates of first summer inspection Start: __ / __ / __ Finish: __ / __ / __

Stage 3 - Second and additional summer inspections

The second and additional summer inspections are the responsibility of the owner and may be carried out by the owner, or a certified footrot contractor employed by the owner.

Proposed dates of second summer inspection Start: __ / __ / __ Finish: __ / __ / __

Additional summer inspections of mobs still found with infection will be carried out.

All sheep with lesions consistent with footrot or foot abnormalities at any summer inspection are to be marked with red. These sheep will be sold for slaughter under a 'Permit to Move' within two weeks of the inspection. Failure to remove red marked sheep from the property will make the owner ineligible to appeal against the application of the 27 month policy. All 'clean' sheep to be marked with a contrasting colour.

Stage 4 - Monitoring

The property will be monitored by the owner after the last summer inspection. This includes regular paddock inspections with close attention to flocks found to have high levels of infection at the first summer inspection. Also, sheep will be inspected when they are yarded.

As far as practicable, mobs will be kept separate during winter and spring and all stock movements within the farm recorded.

The stock inspector will be informed of any issues which may affect the footrot eradication program. The stock inspector will maintain regular contact during winter and spring to offer assistance.

Footbathing

Footbathing is not permitted from the break of the season until the quarantine release inspection, except in specific cases after prior consultation and agreement with the stock inspector/case manager.

If footbathing is done without prior approval within three months of the proposed quarantine release inspection, the property will not be eligible for quarantine release that year.

Sheep movements

All stock movements ONTO and OFF the property will be accompanied by a Permit to Move. All sheep straying on or off the property will be reported to the stock inspector.

Other proposed footrot control measures and factors discussed: Yes No

Footbathing after clean second summer inspection Yes No

A pre-release paddock check of key mobs is planned for approximately _____

Stage 5 - Quarantine release inspection

If there is no evidence of virulent footrot during the monitoring period and there has been no significant deviation from the Footrot Eradication Management Plan, a quarantine release inspection of all sheep will be carried out by Department of Agriculture (approx date: ___/___/___). The owner is responsible for presenting the sheep for this inspection and providing 2 people for each inspector. If there is no evidence of virulent footrot, the property will be released from quarantine.

If there is any evidence of footrot at the release inspection, then quarantine will remain in place. The eradication program will need to be repeated the following summer to allow for release inspection to be done during the next spring. **If any mobs are still found to be infected during the release inspection following the second year of summer inspections, then these mobs and contact sheep will be destocked as soon as possible. The remaining sheep will go through another summer eradication program before quarantine release inspection the following spring-summer**

Agreement

Both parties agree to carry out the program detailed above and any deviation from the management plan will require consultation between the owner and the stock inspector/case manager.

Additional eradication program detail documents attached are:

1. Map(s) of property(s) showing fences (mark which need upgrading), yards and neighbours.
- 2.
- 3.

Signature of owner: _____ Date: ___ / ___ / ___

Signature of Stock Inspector/Case Manager: _____ Date: ___ / ___ / ___

District Office: _____

FOOTROT MANAGEMENT CALENDAR

Year		Main spread period Disease reduction			Spread depends on district weather and pasture type		Non-spread period Summer eradication inspections				Monitoring		
Flock	Description	August	September	October	November	December	January	February	March	April	May	June	July
1													
2													
3													
4													
5													
6													
7													
8													
Introduction													
Culls													
Cattle													
Lambing													
Shearing													

APPENDIX 1 FOOTROT INSPECTION CHECK-LIST

		Comments
Footrot secateurs	<input type="checkbox"/>	_____
Sharpening equipment	<input type="checkbox"/>	_____
Spraymark - red	<input type="checkbox"/>	_____
- green or blue	<input type="checkbox"/>	_____
Disinfectant + equipment	<input type="checkbox"/>	_____
Record sheet	<input type="checkbox"/>	_____
Yards and gates set-up	<input type="checkbox"/>	_____
Order of mobs discussed and agreed	<input type="checkbox"/>	_____
VE machine or tipping cradle	<input type="checkbox"/>	_____
Fly Strike treatment		_____

APPENDIX 2 CRITERIA FOR CULLING AT SUMMER ERADICATION INSPECTIONS

Footrot lesions criteria

Criteria for culling on Summer Eradication Inspection (SEI)	Action	Comments
1a Any trace of interdigital moisture - not complicated by grass-seeds. (Moisture is the most important factor that enables <i>D. nodosus</i> to survive).	Cull	
1b Moisture - considered due to grass seeds.	First SEI - Pass - remove grass seeds, identify sheep with distinctive mark and assess at second SEI (4-8 weeks later). Second SEI - Cull.	
2. Distorted hoof horn: (a) Pared - moist pocket detected. (b) Pared - sound foot	Cull Pass	
3. Foot abscess - active.	Cull	
4. Old foot abscess - if can be pared out to leave a dry, sound foot when pared.	Pass	Farmer to be made aware that old abscess sites which cannot be pared out constitute some risk.
5. Deep cracks in hoof horn - difficult to pare.	Cull	
6. Signs of past under-running of either or both digits (i.e. score 3 or more) but sole now regrown with no moist pockets apparent on paring.	Cull	Even if could pare out, these are the most susceptible animals.
7. Ridging of hoof horn consistent with probably healed score two lesions. Dry Score 2s.	Pass/ Cull	Consider history of benign footrot. Discuss with farmer as to what level of culls is tolerable. If benign footrot not a problem, generally aim to cull dry score 2s, as research indicates a risk of <i>D. nodosus</i> surviving summer in such lesions.
8. Interdigital hair loss score 1 position. Dry score 1s.	Pass	
9. Old 'scabby mouth' sites and possible moisture around/coronet (not between digits).	Pass	

Form No. 3
 Stock Diseases (Regulations) Act 1968 Serial No

DUPLICATE

PERMIT TO MOVE STOCK/ANIMAL PRODUCTS

NO. 45005

I hereby permit _____
 (NAME OF CONSIGNOR)

of _____ to consign
 (ADDRESS OF CONSIGNOR)

the undermentioned stock/animal products from _____
 to _____ for the purpose of _____

and subject to the following conditions: _____

Description	Brands/Earmarks	Tail tag no.	Dates/Results of biological tests/Dippings

Name and address of consignee _____

Name and address of person in charge of stock in transit _____

Date of movement _____

Type of transport _____

Name of Stock Agent _____

The stock are/are not under quarantine restrictions. (Quarantine Order No. _____)

Inspector _____ Address _____

Date: __ / __ / __

APPENDIX 4 PREVENTING REINTRODUCTION OF VIRULENT FOOTROT

After virulent footrot has been eradicated from your flock, you must assess the risk of introducing the disease from neighbours or other sources.

Consider:

- Public roads and your gates.
- Properties divided by public access.
- Boundary fencing and entrance to the property. Is it secure?
- Internal fencing and gates. If a localised footrot infection was found, could you stop it spreading, and could the mob be contained within designated paddocks?
- Ways to prevent introduction of footrot:
 - Avoid mixed lines when purchasing stock.
 - Preferably buy direct from a property - avoid saleyards.
 - Buy during a non-spread period.
 - Insist that the truck which is to carry the introduced sheep is thoroughly washed out with high pressure water before loading.
 - At a sale, ask the vendor or his/her agent for a footrot vendor declaration.
 - Disinfection footbathing of all introduced sheep; if you purchase wisely and isolate stock as recommended, disinfection footbathing is not considered necessary but may reduce the risk.
 - Isolate all introduced sheep for as long as possible, preferably including a spring period, and then check for infection before mixing - prevention is better than cure.
 - Examine any cases of lameness, especially in purchased sheep and if you have any suspicion of footrot, contact your district veterinary officer or stock inspector immediately.

Closely inspect rams when purchasing, and before mixing or joining.

Continue to graze sheep and cattle separately.

APPENDIX 5 FOOTBATHING

Mechanism of action

Footbathing involves the application of a chemical agent to the feet of a sheep. The effectiveness of the treatment lies in the drying effect of the agent. If the foot is dry, the survival rate of the bacteria which cause footrot is greatly reduced.

General

Obtain prices for zinc sulphate heptahydrate and other registered products and mix according to manufacturer's recommendations but there needs to be a minimum of 10 per cent of zinc sulphate (preferably 20%). If you wish to check the concentration of zinc sulphate use the zinc sulphate footbath tester (hydrometer) available from Nufarm for about \$45. After the footbath has settled out overnight, some of the zinc sulphate may settle out onto the bottom. Stir the solution with a broom to ensure the footbath is mixed before the next days bathing.

Two types of footbathing

1. Disease reduction footbathing

This is mainly carried out during the spread period to reduce animal pain and suffering or to improve condition of animals destined for slaughter. Sheep should be held in the footbath for the time according to the manufacturers recommendations, generally for 45 - 60 minutes. However, some farmers have tried 10 minutes and found a reasonable response in reducing the severity of lesions and prevalence. Sheep should be closely monitored and repeat footbathings done as necessary. All feet must be submerged to above the coronet (where the hoof joins the skin).

Disease reduction footbathing is usually carried out during the spread period to reduce the spread of footrot and the severity of lesions of individual animals. Footparing does improve the efficiency of footbathing. Remember not to pare too deeply.

Research has recently shown that five day footbathing of sheep (excluding those with under-running) for 10 minutes each consecutive day, will produce very good disease reduction. Discuss this with your stock inspector as timing is critical.- Farmnote 58/2003.

Chemicals to use:

- 20 per cent zinc sulphate (minimum of 10 per cent).

(Formalin is not recommended).

2. Disinfection footbathing

Adequate surface disinfection can be achieved by walking sheep through a footbath. Sheep should be treated to manufacturers recommendations, generally sheep should spend about five minutes in the footbath. All feet must be submerged to above the coronet. This technique is used to kill any bacteria which may have contacted the surface of the sheep's foot. Foot disinfection is usually done on mobs which have been in contact with suspect contaminated ground, transported on a truck or have arrived from a show or sale.

Chemicals to use:

Same as for disease reduction footbathing.

Footbathing

(a) Footrite® (may not be available now in WA)

Footrite® is a commercial mixture of zinc sulphate heptahydrate and a surfactant (or wetting agent) called sodium laurel sulphate. Footrite® is available in liquid, granular or gel formulation and remains stable in all forms, after transportation and in temperatures ranging from -3°C to 42°C for at least 12 months. Its surfactants aid penetration of zinc into the hard horn of the hoof without prior footparing.

Footrite® should not be used concurrently or for 10 weeks after formalin treatment.

Treatments with Footrite® (i.e. 20 per cent active ingredient)

Granular = 1 bag add to 100 litres of water; or

Liquid = 1 drum add to 1 drum of water

Allow 0.3-0.5 litres Footrite® per sheep (working strength solutions).

Numbers of sheep treated at one footbathing with Footrite® full strength working solution.

	Granular	Liquid
1 bag (22.3 kg)	200-300 sheep	
1 drum (200 litres)		800-1200 sheep
1 drum (20 litres)		80-120 sheep

Allow 1 square metre per 4 mature sheep carrying up to 3 months wool (footbath area). A 25 square metre bath will allow a one hour treatment footbathing of 1000 sheep per day (10 hour day). Left-over bath solution can be pumped into tanks (after passing through filters) and stored for up to 9-12 months.

For properties with less than 3000 sheep the bath should be big enough to treat 50 per cent of the sheep in one day.

Topping up procedure

At the end of each day's footbathing, pump the solution out of the footbath through a filter and into drums, or a suitable storage tank. Restore to the original volume with fresh working strength solution.

(b) Zinc sulphate

Mix at the rate of 35 kg heptahydrate formula to 200 litres of water. (20 per cent active ingredient)

- The heptahydrate form is easier to dissolve than the monohydrate form (mixing rate for monohydrate is less).
- The use of a wetting agent/detergent is still being assessed for its effectiveness.

Amount of chemical required

Approximately 250 kg of zinc sulphate is needed to initially charge a 1000 L capacity footbath to give a 10 per cent solution. The volume of footbath solution removed is about 0.6 L per sheep. See Appendix 9 for more details of costs associated with a summer eradication program.

APPENDIX 6 CONSTRUCTION OF A FOOTBATH

Some farmers throughout the medium and high rainfall areas have constructed footbaths to enable them to footbathe their own sheep. An alternative is to use portable footbaths. If footrot is diagnosed late in the season footbathing and therefore construction of a footbath may not be necessary.

These baths have been constructed with either a concrete floor and sides to a height of approximately 15 cm to 20 cm, or a concrete floor and two layers of bricks for the sides. The bricks are sealed using Brushable Hydroseal®.

The fence around the bath is then constructed of either timber or corrugated iron. It should be designed so that there are no ledges along the side of the footbath for the sheep to stand on.

A gate may be built at either end of the bath for exit and entry of the sheep and also a drain is built into the floor of the bath.

For details of approximate costs of different types of footbaths, see Appendix 8.

Calculation of the volume of the footbath

Multiply length x breadth x height to give volume in cubic metres.

Multiply resulting volume of the bath in cubic metres by 1000 to give the capacity of the bath in litres.

1 cubic metre = 1000 litres

Example

Length	=	8 metres
Breadth	=	3 metres
Height of chemical	=	55 millimetres
Volume	=	8 x 3 x 0.055 cubic metres
	=	1.32 cubic metres or 1320 litres

Calculation of the holding capacity of the footbath

If we assume that a 60 kg half wool sheep occupies approximately $\frac{1}{3}$ square metre of space, a footbath of this size would hold approximately 72 sheep.

Area	=	Length x breadth
	=	8 x 3 square metres
Number of sheep	=	24 divided by $\frac{1}{3}$
	=	72

APPENDIX 7 FOOTROT VENDOR DECLARATION

The footrot vendor declaration scheme was recommended by the Footrot Review of 1993/4 and was initiated by the WA Footrot Eradication Campaign Advisory Committee. It is supported by WA Farmers, Pastoralists and Graziers Association, WA Livestock Salesmans Association, Australian Association of Agricultural Consultants, Stud Merino Breeders Association and Department of Agriculture. A footrot vendor declaration is a signed statement by a livestock owner that his/her stock meet certain requirements.

It contains two sections-

Part 1- Core Declaration (Must be completed and signed by owner/vendor)

Part 2- Optional Declaration (May be completed and signed by owner/vendor)

A FOOTROT VENDOR DECLARATION IS NOT A GUARANTEE OF FREEDOM OF DISEASE

Benefits of a vendor declaration

There are advantages for all parties involved - vendors, buyers and livestock selling agents. A declaration:

- places greater responsibility upon the seller (vendor) and the buyer to look for signs of footrot;
- improves the image and reputation of stock from individual vendors;
- reduces the risk of litigation of both individuals and companies;
- reduces the risk of spread of disease.

How does the scheme work?

This is a voluntary scheme but purchasers should ask vendors or agents for a declaration on the stock before purchasing. A vendor should obtain a book of official vendor declaration forms through their local livestock selling agent. A small fee may be charged to cover printing and handling costs.

THE VENDOR MUST READ THE DECLARATION VERY CAREFULLY BEFORE COMPLETING IT AND SIGNING IT

Agents **CANNOT** make the declaration on behalf of clients.

The declaration must be filled in completely, signed and dated by the owner of the stock.

The declaration (white copy) accompanies the stock at all times and a copy (yellow copy) remains in the book with the vendor. These are self-carboning forms, so each original and copy must be separated by the cardboard interleaf.

BUYERS SHOULD ISOLATE AND LOOK FOR SIGNS OF FOOTROT IN ALL INTRODUCED STOCK

OWNER/VENDOR DECLARATION

FOR VIRULENT FOOTROT IN WESTERN AUSTRALIA

This declaration is provided in good faith but must not be construed
as a guarantee of freedom from virulent footrot.

Evidence of footrot includes inflammation of interdigital skin.

Virulent footrot (VFR) is caused by stable (S) strains of *Dichelobacter nodosus* as tested by the gelatin gel test.

Benign footrot (BFR) is caused by unstable (U) strains of *D nodosus*.

Usage of this form is supported by the WA Footrot Eradication Campaign Advisory Committee

PART 1 - CORE DECLARATION

This Part MUST be completed and signed by the Owner/Vendor.

1. **I certify** that I (print name).....of (print address)
.....
am the owner/manager of (property name)
on Road in the (Shire) of under the
Trading Name of Telephone No.
2. **Based on inspections done and the property's footrot history, I believe virulent footrot is NOT present on the above property.**

Signed _____ Date: __ / __ / __

PART 2 - OPTIONAL DECLARATION

This Part MAY be completed and signed.

3. I believe that benign footrot **IS NOT** present in my flock. Yes No Don't know
- 4 **I certify that, in relation to the SHEEP/GOATS offered for sale;**
 - A. they are not known to have had any contact with sheep or goats affected with virulent footrot within twelve months prior to the date of this declaration;
Yes No Don't know
 - B. lame animals and at least 30 other sheep in each mob have been examined within the previous 21 days prior to signing this declaration and no evidence of footrot was observed Yes No
 - C. they **have not** been footbathed for any purpose within the three months prior to the date of this declaration Yes
5. **I certify in relation to the PROPERTY described in Part 1**

Virulent footrot in sheep or goats has not been known or suspected to have been present on the property for at least 12 months 2 years more than 2 years prior to this declaration

Signed _____ Date: __ / __ / __

RECOMMENDED BIOSECURITY PRECAUTIONS BY PROSPECTIVE PURCHASER:

Consider whether the presence of benign footrot is an important issue to you or not. Benign footrot is present on approximately 15 to 20 per cent of WA sheep and goat properties and is not subject to the WA Footrot Eradication program.

Read this vendor declaration carefully and ask the vendor and/or the agent for further information if required by you.

Before Purchase: Inspect sheep for signs of footrot.

RECOMMENDED BIOSECURITY PRECAUTIONS BY PURCHASER:

Prior to Loading the sheep/goats; Insist that the stock transport vehicle is clean.

Immediately after Arrival on the property of destination: Inspect sheep/ goats. If footrot is suspected immediately obtain veterinary or Stock Inspector advice. Keep purchased mob isolated. Place the introduced sheep/goats in clean paddocks (unstocked for at least seven days).

APPENDIX 8 COSTS ASSOCIATED WITH A SUMMER ERADICATION PROGRAM

Average numbers of sheep inspected per day

This will depend on the skill and experience of the person doing the inspections, the type of sheep handling equipment used, the ability of yard staff to keep sheep moving, the climatic conditions, the length of day worked, the condition of the feet and how much paring is carried out. In good conditions with minimal paring two people inspecting and three yard staff could average about 1000 sheep per day for the first summer inspection.

Labour for inspections

Contract inspectors

Two rates may be given but need to get information on how many sheep are inspected per day and if rate includes machine hire.

- (i) About \$130 per person per day (and usually need two persons)
- (ii) About \$25 per person per hour (and usually need two persons) for full paring.
About \$20 per person per hour for second inspection with minimal paring.

Rates for footrot contracts average out to 90¢ per head.

Yard staff

Need at least three people to 'push up' sheep and one to muster.
Average cost is \$130 per person per day (excludes meals)

Equipment and materials

Spraymark \$8/can (need red and blue or green); allow up to 600 sheep per can

Footrot shears \$80 each (hand operated)
\$350 for air operated shears(or more)

Disinfectant Hibitane® - approximately \$55 for 5 litres. Allow 1 litre for inspection 1000 sheep.

Crutching cradle Single sided free standing - about \$1,500
Left and right free standing - about \$1,800
Double, i.e. 2 ss in a row - about \$3,700

V belt machine \$7850 for new machine. A local farmer may be willing to lend one.

Approximate costs of miscellaneous items

Footbathing

Footbaths \$150 each for 2.4 m x 1.2 m (8' x 4') moulded plastic
\$70-\$85 each for 2.4 m x 1.2 m (8' x 4') galvanised plus extra for weldmesh
\$700 for self-made concrete type plus extra for weldmesh
\$2,000 for constructed concrete footbath

Zinc sulphate \$22 per 25 kg bag of heptahydrate form - when mixed each litre costs about 16¢ and if each sheep removed about 0.6 L, then works out to be about 10¢/head.

Fencing Average of \$320 per 200 m (7 line and 20 posts per 200 m).

APPENDIX 9. TAXATION PROVISIONS FOR CULLED STOCK

IMPORTANT:

- Before taking any action, first contact your tax advisor or accountant.
- The information below may be of use as a guide to the current situation.

Introduction

A taxpayer may elect to use Subdivision 385-E of the 1997 Income Tax Assessment Act on the proceeds of stock which die or are destroyed pursuant to an Act that makes provision for the compulsory destruction of livestock for disease control or eradication.

(Income Tax Ruling No. IT 228)

The subdivision allows the proceeds to be reduced by the purchase of replacement stock. Tax is payable on unused proceeds after five years. There are two options but a taxpayer can elect to use only one option and is unable to change between options.

Western Australia

The Stock Diseases (Regulation) Act regulations make provision for the destruction of livestock for the purpose of controlling or eradicating disease:

Enzootic Diseases - Enzootic Diseases Regulations regulation 18.

Exotic Diseases - Exotic Diseases General Regulations regulation 9.

In Western Australia, taxation electives have been used only in relation to Tuberculosis. However, based on rulings from the Australian Taxation Office (No. IT 228 of 21.04.82) in regard to footrot and other scheduled diseases in this State, it should apply to any disease scheduled under the Stock Diseases (Regulations) Act.

Use and certification

In electing to use subdivision 385-E a taxpayer must retain, with the taxation returns, evidence as to the circumstances of the death or destruction.

However, the Taxation Office notes that in the case of footrot the normal course is for the property to be quarantined and recommended as the only practical means of dealing with the problem, the subdivision may be applied to the proceeds of sheep sold. The advice or recommendations may come from the district veterinary officer or other appropriate official. In these cases, some form of certification is required.

Options are:

1. A Certificate of Agreement between the owners and the official stating the reason for sale for slaughter and including:
 - (i) property details;
 - (ii) stock and disease details;
 - (iii) numbers and class of stock to be sold for slaughter;
 - (iv) date of commencement of sales and expected date of completion.
- (2) A copy of the Footrot Eradication Management Plan, which contains the details outlined above.

APPENDIX 10. FOOTROT EXTENSION MATERIALS

- Footrot Farmnote No. 7/98 '[Understanding benign footrot in sheep](#)'.
- Footrot Farmnote No. 2/2003 '[Footrot Eradication in Western Australia](#)'.
- Livestock carrier truck washing reminder cards.
- 'Facts about Footrot' June 2003.
- Farmnote No. 58/2003 '[Five-day foot bathing treatment of ovine footrot](#)'.