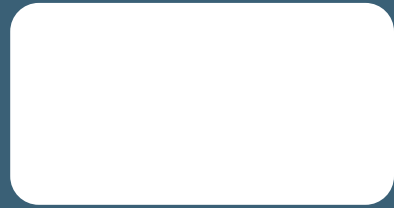


# Sheep & Beef Cattle Health Review workbook

You can download  
this document as an  
PDF on our website.  
Search for:  
Health Review



# Introduction

Aim: Healthy livestock achieving optimal performance through proactive, cost-effective health management.

## The Health Review process

The Health Review is a process that assesses on-farm health risks in relation to current and target animal performance.

## Why do a Health Review?

A Health Review captures overall health stewardship, ensures health spend is targeted for optimum profitability, and provides opportunity to evaluate current policies and potential areas of risk. The Health Review clearly details the what, why, when and by whom of on-farm health management.

It also provides a basis for regular review, and allows clear communication for those involved, including farm owners, staff, farm consultants and veterinarians.

## Details:



1. Farm name:

2. Date of review:

3. Key farm staff:

4. Name of vet:

# The three steps

This workbook will act as a guide for the Health Review. It is designed to be an interactive process.

# 1

## Preparation and performance review

Information-based decision making. The more specific you can be about performance and target setting, the more directed the next steps can be.

# 2

## Risk assessment and disease management review

The 'engine room' of this review. This step helps identify key areas for action and where priority spending can be focussed.

# 3

## Actions – Plan, do, review

This step is crucial for success. An action plan will be created that keeps everyone on task, and provides a basis for review.



Action required



Information and tips



Text area for you to fill in

# Preparation and performance review

In this step you will do the ground work that provides context to the Health Review. Having a clearly defined set of goals and identifying where gains can be made helps prioritise actions.

## Step 1

### Goals



- List and describe farm goals (consider short, medium and long-term goals).
- Examples:
  - Short term: Hill block subdivision to allow better feed utilisation*
  - Medium term: Increase ewe numbers to 'x'*
  - Long term: Develop reticulated water system so troughs are in all paddocks, and have water storage systems that allow for drought conditions*



# Preparation and performance review

## Step 1

### Farm strengths



- List and describe farm strengths.
- *Examples:*  
*Summer safe OR free draining flats*

Goals

Performance

Targets/KPIs

Summary of opportunities

# Performance

Use this checklist to help gather relevant data and detail.

## Checklist:



### 1. On farm

- Stock tallies
- Key dates
- Body condition score results
- Growth rates
- Scanning results
- Docking results
- Death records
- Current animal health policies
- Animal health spend

### 2. Vet

- Veterinary reports (e.g. trace elements, FECRT)
- Vet spend
- Product use

### 3. Outside the farm gate

- Kill-sheets

# Step 1



# Performance measurement

Once you have gathered your farm production data, the next step is to turn that data into useful information to help with making good decisions.

Additional resources and interactive tools can be found on the Beef + Lamb New Zealand website, [beeflambnz.com/data-tools](https://beeflambnz.com/data-tools) and [beeflambnz.com/knowledge-hub](https://beeflambnz.com/knowledge-hub).

## Step 1



### Tools

Beef + Lamb New Zealand data tools

[beeflambnz.com/data-tools](https://beeflambnz.com/data-tools)

Beef + Lamb New Zealand knowledge hub

[beeflambnz.com/knowledge-hub](https://beeflambnz.com/knowledge-hub)

Goals

Performance

Targets/KPIs

Summary of opportunities



## Targets and key performance indicators

The following measures of productivity are common to breeding-finishing flocks and are likely impacted by animal health. The measurable outcome for a breeding ewe flock is kg lamb weaned/ewe mated.



KPI	Definition	Note	Season actual	Your farm target	Example of good performance
<b>Mating performance: Scanning percentage and dry percentage:</b> 1. MA Ewes 2. Two-tooths 3. Hoggets	<b>Scanning %:</b> Number of fetuses divided by the number of ewes presented for breeding.  <b>Dry%:</b> Number of ewes not in lamb divided by the number of ewes presented for breeding.	Reflects both fertility and fecundity  Also important to determine # of cycles mated for.			<b>Scanning:</b> 1. 180% + 2. 170%+ 3. 130%  <b>Dry:</b> 1. 3% 2. 3% 3. 20%
Lambing Percentage	Number of lambs divided by number of ewes presented for breeding				150% +
Lamb loss % (scanning to docking)	Number of lambs expected at docking minus number of lambs present at docking divided by number expected	Reflects lamb loss from scanning to docking			Varies between farms and regions. Typically <12%
Weaning Percentage	Number of lambs divided by number of ewes presented for breeding				148% +
Pre-weaning growth rate (g/day)		Need to assume a birth weight and date			250–300g/day
Days to weaning					90 days
Post-weaning growth rate (g/day)					150g/day
Days to slaughter (or sale)					150 days (from birth)
<b>Mortality rate:</b> 1. MA Ewes 2. Two-tooths 3. Hoggets	Number of deaths divided by total number of present at planned start of breeding				1. 5% 2. 3% 3. 3%





Sheep



# Farm specific targets

Use the table below to record further targets specific to your enterprise.



Description	Note	Season actual	Your farm target
<i>Example:</i> Minimum ewe pre-lambing BCS		2/5 (average 2.7/5)	3/5

## Step 1



Sheep



# Step 1

# Body Condition Scoring (BCS) and weight data



BCS and weights are essential for optimal performance and health, and also act as a proxy for animal nutrition. Use the box below to record current data and your targets at key times of the year e.g. pre-mating, scanning, set stocking and weaning. Ensure you consider both the range and average.

Season actual	Your farm target



### Further information

- Beef + Lamb New Zealand 'Ewe Body Condition Scoring' Factsheet & Resource Book
- Beef + Lamb New Zealand 'Body Condition Scoring (sheep)' Learning Module
- Kenyon PR, Maloney SK, Blache D. Review of sheep body condition score in relation to production characteristics. New Zealand Journal of Agricultural Research, 57 (1), Pp 38 -64, 2014

# Biosecurity

Sheep



## Step 1



Having a robust biosecurity plan reduces the risk of disease introduction. Use the space below to outline current protocols and any potential gaps/risks that require addressing.

Goals

Performance

Targets/KPIs

Summary of opportunities



### Further information

- Beef + Lamb New Zealand 'Biosecurity WOF Checklist'
- Beef + Lamb New Zealand 'Biosecurity Guidelines'

Sheep



Step 1

# Summary of opportunities

At the end of Step 1 you should have clearly documented your farm goals, targets and production opportunities.

Key areas of focus

*Examples: Improve mating performance OR Reduce lamb wastage*

- *Number in order of priority*

--

Goals

Performance

Targets/KPIs

Summary of opportunities

**Step 1 complete.**

Don't forget to save as you go!

Having identified opportunities to improve production, the next step helps identify issues that may reduce performance and prevent you reaching your targets.



## Targets and key performance indicators

The following measures of productivity are common to beef breeding herds and are likely impacted by animal health. The measurable outcome for a beef breeding herd is kg calf weaned per cow mated.



KPI	Definition	Note	Season actual	Your farm target	Example of good performance
<b>Mating performance:</b> 1. MA cows 2. 2nd calvers 3. Heifers	Number of in-calf cows divided by number of cows mated	Reflects conception rate Also important to determine # of cycles mated for			1. 95% 2. 90% 3. 90%
Weaning Percentage	Number of calves divided by number of cows scanned in-calf	Reflects calf survival from scanning to weaning.			90%
Pre-weaning growth rate (g/day)		Need to assume a birth weight and date			1kg/day +
Days to weaning					180 days
Productivity	Number of calves weaned x average calf weaning weight divided by number of cows mated	If available, can use total kg calf weaned			
Efficiency	Productivity divided by average cow liveweight	considers cow maintenance requirements			
Cow mortality rate	Number of deaths divided by total number of present at start of the season				3%

Goals

Performance

Targets/KPIs

Summary of opportunities



# Farm specific targets



Use the table below to record further targets specific to your enterprise.

Description	Note	Season actual	Your farm target
<i>Example: Minimum heifer mating weight</i>		295kg	320kg



Beef



Step 1

# Body Condition Scoring (BCS) and weight data



BCS and weights are essential for optimal performance and health, and also act as a proxy for animal nutrition. Use the box below to record current data and your targets at key times of the year. Ensure you consider both the range and average.

Season actual	Your farm target

Goals

Performance

Targets/KPIs

Summary of opportunities



## Further information

- Beef + Lamb New Zealand 'Beef Cow Body Condition Scoring' Factsheet & Resource Book

Beef



Step 1

# Biosecurity



Having a robust biosecurity plan reduces the risk of disease introduction. Use the space below to outline current protocols and any potential gaps/risks that require addressing.

Goals

Performance

Targets/KPIs

Summary of opportunities



## Further information

- Beef + Lamb New Zealand 'Biosecurity WOF Checklist'
- Beef + Lamb New Zealand 'Biosecurity Guidelines'





# Step 1

# Summary of opportunities

At the end of Step 1 you should have clearly documented your farm goals, targets and production opportunities.

## Key areas for improvement

*Examples: Improve heifer mating performance OR Improve pre-weaning growth rates*

- *Number in order of priority*

Goals

Performance

Targets/KPIs

Summary of opportunities

## Step 1 complete.

Don't forget to save as you go!

Having identified opportunities to improve production, the next step helps identify issues that may reduce performance and prevent you reaching your targets.

# Risk assessment and disease management review

## Step 2

When looking to prevent and manage disease, there are different motivations including but not limited to; profit, welfare and the satisfaction of knowing your stock are healthy. To manage animal health in a profitable way you have to establish that the disease is (or could be) affecting performance, decide what level of risk you are willing to accept and look at options for prevention and management to ensure the most appropriate option is selected. It is also important to look at the longer term sustainability of the management practices to ensure efficacy is maintained.

By the end of this step you will have assessed the risks posed to your stock by each disease, prioritised the key diseases to be managed on your farm, reviewed the current management of those diseases and identified where more information is needed.

Risk  
assessment  
table

Disease  
management  
Review

# Risk assessment

In this step you will conduct a risk assessment of the diseases which could be limiting production on your farm.

When assessing the risk of each disease/issue the three key areas to consider are:

Risk to animals

- Production (clinical and subclinical disease).

Risk to people

- Is this a disease people can get (zoonosis)? Is this a health and safety risk?

Risk to the business/reputational risk

- What impact does/would this disease have on the business?

## How to complete the risk assessment table: (featured on the next page)

For each disease in the table complete the following:

**Part 1:** In the NATURAL RISK column, rate from 1–10 (1 being no risk and 10 being extreme risk) the risk to production/health from this disease/issue if you were to do nothing to prevent or manage it on your farm.

**Part 2:** In the CURRENT RISK column, rate from 1–10 (as defined above) the risk that remains with the current management in place.

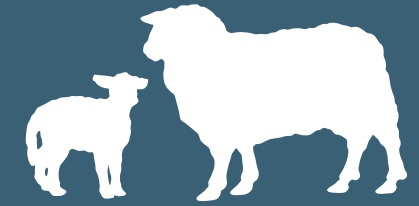
**Part 3:** Rate the diseases in terms of priority management for your farm. Consider how likely this disease is to occur, and the potential cost/impact to the farm if it does.

This is designed to be a quick exercise, without getting too involved in detail. You will look deeper into management of each disease in the following pages of the workbook.

## Step 2

Risk  
assessment  
table

Disease  
management  
Review



# Risk assessment table

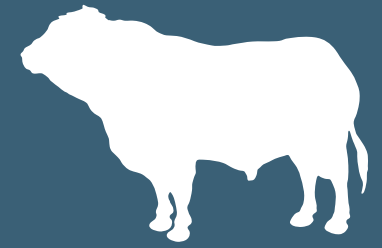


DISEASE/ISSUE	NATURAL RISK	CURRENT RISK	PRIORITY FOR MANAGING
Internal parasites & drench resistance			
Flystrike			
Trace element deficiencies			
Facial eczema			
Clostridial disease			
Campylobacteriosis			
Toxoplasmosis			
Scabby mouth			
Pneumonia			
Salmonellosis (enteric and abortive)			
Leptospirosis			
Johne's disease			
Lameness			
Metabolic			
Breeding soundness			
Other			



A list of risk factors for each of these diseases are described here.





# Risk assessment table



DISEASE/ISSUE	NATURAL RISK	CURRENT RISK	PRIORITY FOR MANAGING
Internal parasites & drench resistance			
Trace element deficiencies			
Facial eczema			
Metabolic			
Clostridial			
BVD			
Leptospirosis			
Theileria			
Bloat			
Breeding soundness			
Other			



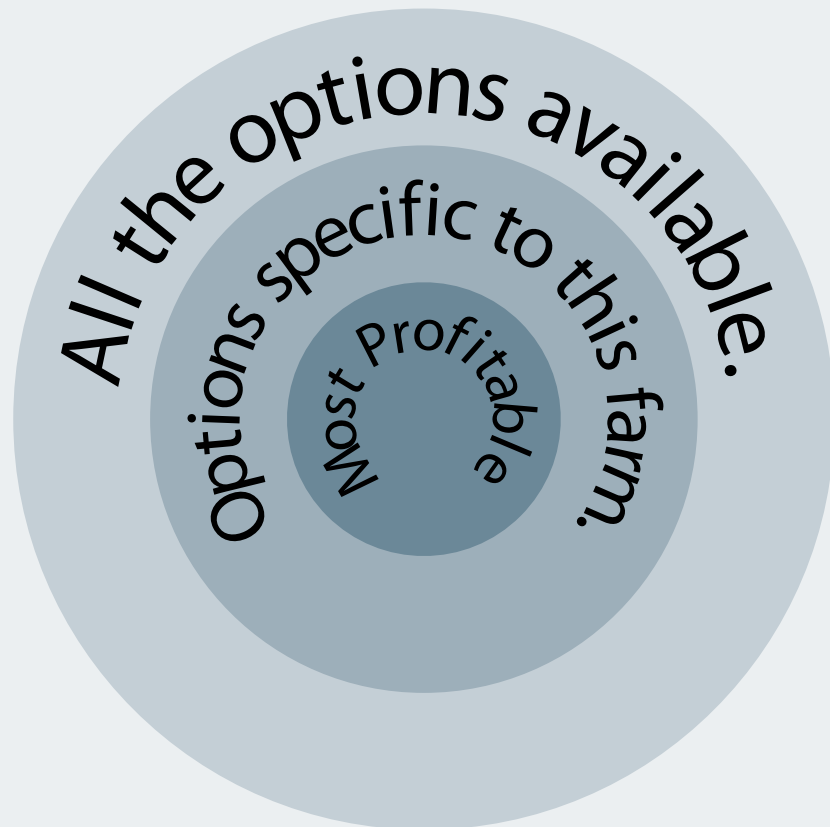
A list of risk factors for each of these diseases are described here.



## Disease management review

This step involves reviewing the management of all the relevant diseases, to ensure each is being managed in the most effective, profitable way.

# Step 2



# Step 2



## Ask these important questions

When filling out this table it is important to ask some probing questions.

Information-based health management focuses on addressing the root cause of problems and identifying a true need for any health intervention.

When considering how you manage health issues, ask yourself the following questions:

- What do we need to know about the disease?
- Why do we do this? Do we need to be doing this?
- What are the likely/possible impacts of the disease on this farm?
- Can we monitor for this disease/issue? Is this monitoring justified?
- Is this the best way for us to manage this disease?
- What are other management factors that influence how we manage this disease/issue?



## Disease management worksheets

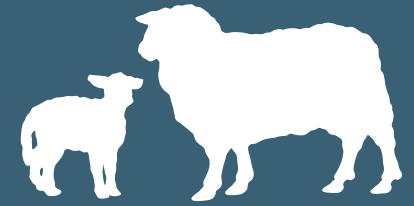
Fill in the disease worksheets appropriate for your farm on the following pages.

Risk  
assessment  
table

Disease  
management  
Review

# Internal parasites

Sheep



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk assessment table

Disease management Review

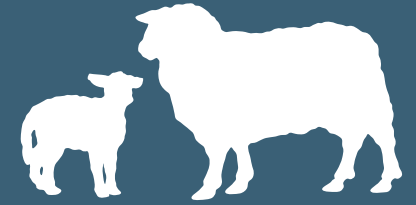


Further information  
[wormwise.co.nz](http://wormwise.co.nz)



# Flystrike

Sheep



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

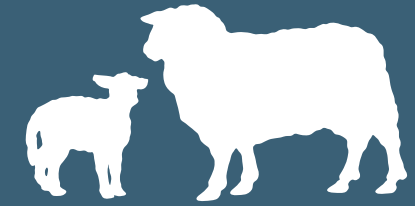
Risk assessment table

Disease management Review



**Further information**

- Beef + Lamb New Zealand 'Flystrike' factsheet
- NZVA 'Ectoparasites of sheep in New Zealand and their control'



## Step 2

# Trace element deficiencies



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- John's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk assessment table

Disease management Review

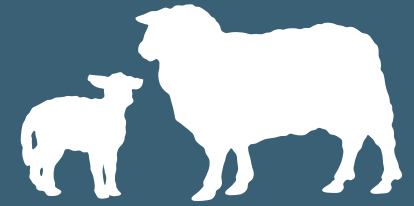


### Further information

- Clark RG, Wright DF, Millar KR, Rowland JD. Reference curves to diagnose cobalt deficiency in sheep using liver and serum vitamin B12 levels. *New Zealand Veterinary Journal*, 37, Pp 7–11, 1989
- Clark RG, Wright DF. Cobalt deficiency in sheep and diagnostic reference ranges. *New Zealand Veterinary Journal*, 53 (4), Pp 265–266, 2005
- Ellison RS. A Review of Copper and Selenium Reference Ranges in Cattle and Sheep. Proceedings of the 22nd Annual Seminar of the Society of Sheep and Beef Cattle Veterinarians of the New Zealand Veterinary Association, Pp 3–26, 1992
- Ellison RS. Major trace elements limiting livestock performance in New Zealand. *New Zealand Veterinary Journal*, 50 (3), Pp 35–40, 2002
- Grace ND, Knowles SO. A reference curve using blood selenium concentration to diagnose selenium deficiency and predict growth responses in lambs. *New Zealand Veterinary Journal*, 50 (4), Pp 163–165, 2002
- Grace N, Knowles S, Sykes A. Managing Mineral Deficiencies in Grazing Livestock. Occasional Publication No. 15 of the New Zealand Society of Animal Production, 2010, ISBN 978-0-473-15154-6
- Parkinson TJ, Vermunt JJ, Malmo J. Chapter 13: Trace elements and vitamin nutrition. *Diseases of Cattle in Australasia*, 2010, ISBN 978-0-9583634-4-7
- West DM, Bruere AN, Ridler AL. Chapter 7: Clinical aspects of trace-element requirements of grazing ruminants with particular reference to sheep and cattle. *The Sheep: Health, Disease & Production* 4th Edition, Pp 112–155, 2018
- Beef + Lamb New Zealand 'Trace element nutrition of sheep' factsheet

# Facial eczema

Sheep



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--



**Further information**

Beef + Lamb New Zealand 'Facial eczema' factsheet and resource book  
 West DM, Bruere AN, Ridler AL. Chapter 18: Disorders of the skin and wool. The Sheep: Health, Disease & Production 4th Edition, Pp 308–329, 2018

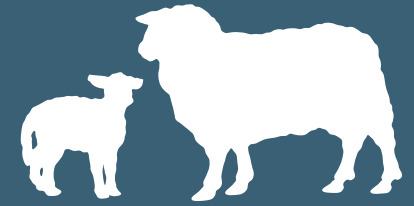
- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk  
assessment  
table

Disease  
management  
Review

# Clostridial disease

Sheep



## Step 2



CURRENT  
MANAGEMENT

OTHER MANAGEMENT  
OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--



**Further information**

West DM, Bruere AN, Ridler AL. Chapter 15: Clostridial diseases. The Sheep: Health, Disease & Production 4th Edition, Pp 270–281, 2018

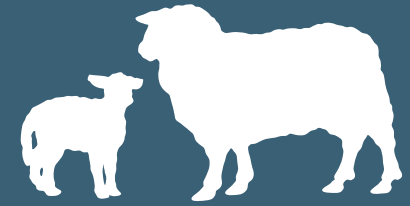
- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk  
assessment  
table

Disease  
management  
Review

# Campylobacteriosis

Sheep



## Step 2



CURRENT  
MANAGEMENT

OTHER MANAGEMENT  
OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--



**Further information**

West DM, Bruere AN, Ridler AL. Chapter 4: Abortion in ewes. The Sheep: Health, Disease & Production 4th Edition, Pp 62–75, 2018

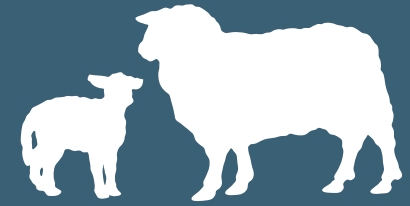
- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk  
assessment  
table

Disease  
management  
Review

# Toxoplasmosis

Sheep



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other



**Further information**

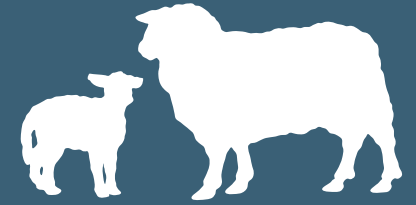
West DM, Bruere AN, Ridler AL. Chapter 4: Abortion in ewes. The Sheep: Health, Disease & Production 4th Edition, Pp 62–75, 2018

Risk assessment table

Disease management Review

# Scabby mouth

Sheep



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other



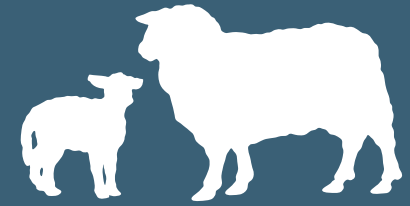
**Further information**  
Beef + Lamb New Zealand 'Scabby mouth' factsheet

Risk assessment table

Disease management Review

# Pneumonia

Sheep



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- John's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk assessment table

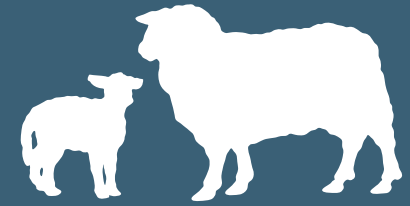
Disease management Review



### Further information

- Alley MR. Pneumonia in Sheep in New Zealand: an overview. *New Zealand Veterinary Journal*, 50: supplement 3, Pp 99–101, 2002
- Goodwin KA, Jackson R, Brown C, Davies PR, Morris RS, Perkins NR. Enzootic Pneumonia of lambs in New Zealand: Patterns of prevalence and effects on production. *Proceedings of the 31st Seminar of the Society of Sheep and Beef Cattle Veterinarians of the New Zealand Veterinary Association*. Pp 1–6, 2001
- Goodwin KA, Heuer C, Davies PR. Case-control study of pneumonia in growing lambs in New Zealand. *Proceedings of the 34th Seminar of the Society of Sheep and Beef Cattle Veterinarians of the New Zealand Veterinary Association*. Pp 173–179, 2004
- Goodwin-Ray KA, Stevenson MA, Heuer C, Cogger N. Economic effect of pneumonia and pleurisy in lambs in New Zealand. *New Zealand Veterinary Journal*, 56, Pp 107–114, 2008
- West DM, Bruere AN, Ridler AL. Chapter 6: Hogget growth, pneumonia and diseases of hoggets. *The Sheep: Health, Disease & Production 4th Edition*, Pp 92–111, 2018





# Step 2

## Salmonellosis (enteric and abortive)



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk assessment table

Disease management Review

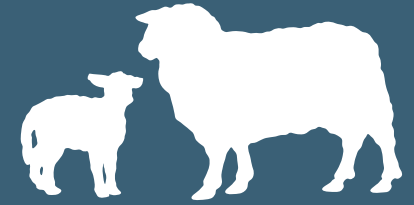


**Further information**

- Beef + Lamb New Zealand 'Salmonella' factsheet
- West DM, Bruere AN, Ridler AL. Chapter 4: Abortion in ewes. The Sheep: Health, Disease & Production 4th Edition, Pp 62 - 75, 2018
- West DM, Bruere AN, Ridler AL. Chapter 16: Other causes of sudden death. The Sheep: Health, Disease & Production 4th Edition, Pp 282 - 291, 2018

# Leptospirosis

Sheep



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk assessment table

Disease management Review

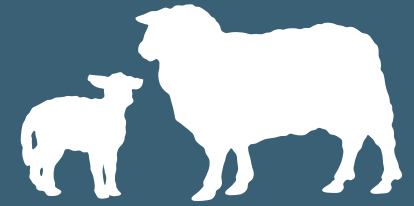


**Further information**

Heuer C, Benschop J, Stringer L, Collins-Emerson J, Sanhueza J, Wilson P. Leptospirosis in New Zealand – Best Practice Recommendations for the use of vaccines to prevent human exposure. A Report by Massey University Prepared for the New Zealand Veterinary Association. June 2012

# Johne's disease

Sheep



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk assessment table

Disease management Review

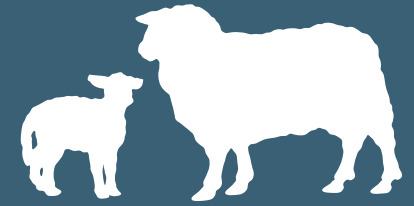


### Further information

- Beef + Lamb New Zealand 'Johne's disease – sheep' factsheet
- West DM, Bruere AN, Ridler AL. Chapter 10: Poor thrift in adult ewes. The Sheep: Health, Disease & Production 4th Edition, Pp 282–291, 2018

# Lameness

Sheep



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk assessment table

Disease management Review

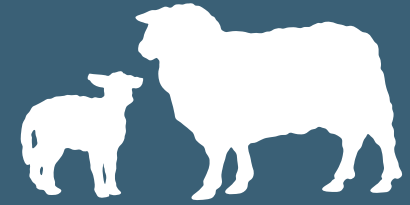


### Further information

- New Zealand Merino and Beef + Lamb New Zealand 'Guide to the management of footrot in sheep' resource book
- West DM, Bruere AN, Ridler AL. Chapter 11: Foot diseases and lameness. The Sheep: Health, Disease & Production 4th Edition, Pp 234–251, 2018

# Metabolic

Sheep



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

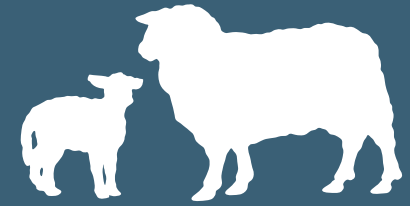
Risk assessment table

Disease management Review



**Further information**

- Beef + lamb New Zealand 'Metabolic diseases in ewes' factsheet
- West DM, Bruere AN, Ridler AL. Chapter 9: Metabolic disorders. The Sheep: Health, Disease & Production 4th Edition, Pp 188–205, 2018



## Step 2

# Breeding soundness



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

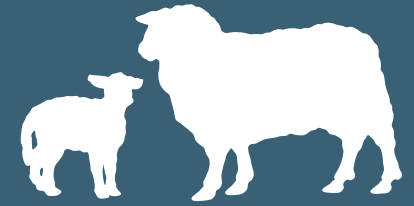
Risk assessment table

Disease management Review



### Further information

- West DM, Bruere AN, Ridler AL. Chapter 2: Genital soundness in the ram and diseases of the genitalia. The Sheep: Health, Disease & Production 4th Edition, Pp 16–39, 2018
- West DM, Bruere AN, Ridler AL. Chapter 3: Factors affecting lamb production and the investigation of poor lambing. The Sheep: Health, Disease & Production 4th Edition, Pp 40–61, 2018
- Beef + Lamb New Zealand 'Making every mating count' resource book
- Beef + Lamb New Zealand 'BCS' resources



# Step 2

## Painful husbandry procedures



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

Risk assessment table

Disease management Review

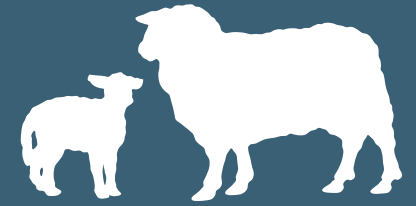


**Further information**

- Beef + Lamb New Zealand 'Painful husbandry procedures in sheep' Factsheet

# Other

## Sheep



# Step 2



CURRENT  
MANAGEMENT

OTHER MANAGEMENT  
OPTIONS

COST vs BENEFIT

AGREED MANAGEMENT

FURTHER INFORMATION NEEDED

- Internal parasites
- Flystrike
- Trace element deficiencies
- Facial eczema
- Clostridial disease
- Campylobacteriosis
- Toxoplasmosis
- Scabby mouth
- Pneumonia
- Salmonellosis (enteric and abortive)
- Leptospirosis
- Johne's disease
- Lameness
- Metabolic
- Breeding soundness
- Painful husbandry procedures
- Other

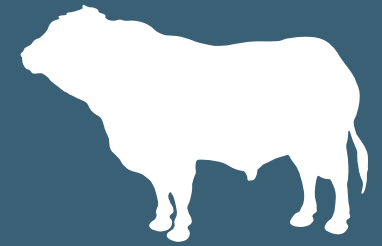
Risk  
assessment  
table

Disease  
management  
Review



# Internal parasites

Beef



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--



**Further information**

Beef + lamb New Zealand 'Trace element nutrition of cattle' factsheet

- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools

Risk assessment table

Disease management Review



## Step 2

# Trace element deficiencies



CURRENT MANAGEMENT	OTHER MANAGEMENT OPTIONS

### COST vs BENEFIT

### AGREED MANAGEMENT

--	--

### FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools



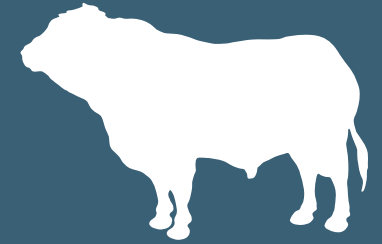
### Further information

- Clark RG, Wright DF, Millar KR, Rowland JD. Reference curves to diagnose cobalt deficiency in sheep using liver and serum vitamin B12 levels. *New Zealand Veterinary Journal*, 37, Pp 7–11, 1989
- Clark RG, Wright DF. Cobalt deficiency in sheep and diagnostic reference ranges. *New Zealand Veterinary Journal*, 53 (4), Pp 265–266, 2005
- Ellison RS. A Review of Copper and Selenium Reference Ranges in Cattle and Sheep. Proceedings of the 22nd Annual Seminar of the Society of Sheep and Beef Cattle Veterinarians of the New Zealand Veterinary Association, Pp 3–26, 1992
- Ellison RS. Major trace elements limiting livestock performance in New Zealand. *New Zealand Veterinary Journal*, 50 (3), Pp 35–40, 2002
- Grace ND, Knowles SO. A reference curve using blood selenium concentration to diagnose selenium deficiency and predict growth responses in lambs. *New Zealand Veterinary Journal*, 50 (4), Pp 163–165, 2002
- Grace N, Knowles S, Sykes A. Managing Mineral Deficiencies in Grazing Livestock. Occasional Publication No. 15 of the New Zealand Society of Animal Production, 2010, ISBN 978-0-473-15154-6
- Parkinson TJ, Vermunt JJ, Malmo J. Chapter 13: Trace elements and vitamin nutrition. *Diseases of Cattle in Australasia*, 2010, ISBN 978-0-9583634-4-7
- West DM, Bruere AN, Ridler AL. Chapter 7: Clinical aspects of trace-element requirements of grazing ruminants with particular reference to sheep and cattle. *The Sheep: Health, Disease & Production* 4th Edition, Pp 112–155, 2018



# Facial eczema

Beef



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--



**Further information**

Beef + Lamb New Zealand 'Facial eczema' factsheet and resource book

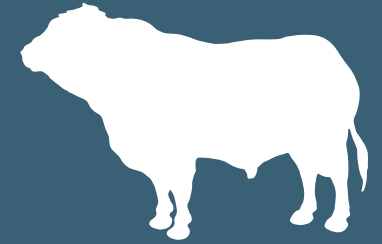
- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools

Risk assessment table

Disease management Review

# Metabolic

Beef



## Step 2



CURRENT  
MANAGEMENT

OTHER MANAGEMENT  
OPTIONS

COST vs BENEFIT

AGREED MANAGEMENT

FURTHER INFORMATION NEEDED

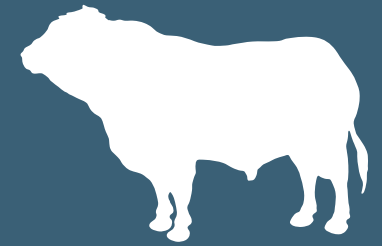
- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools

Risk  
assessment  
table

Disease  
management  
Review

# Clostridial

Beef



## Step 2



CURRENT  
MANAGEMENT

OTHER MANAGEMENT  
OPTIONS

COST vs BENEFIT

AGREED MANAGEMENT

FURTHER INFORMATION NEEDED

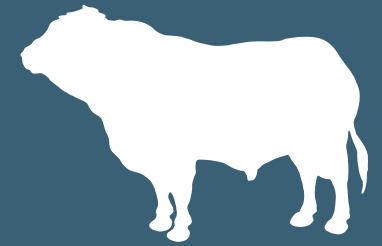
- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools

Risk  
assessment  
table

Disease  
management  
Review

# BVD

## Beef



# Step 2



CURRENT  
MANAGEMENT

OTHER MANAGEMENT  
OPTIONS

COST vs BENEFIT

AGREED MANAGEMENT

FURTHER INFORMATION NEEDED



Further information  
[controlbvd.org.nz](http://controlbvd.org.nz)

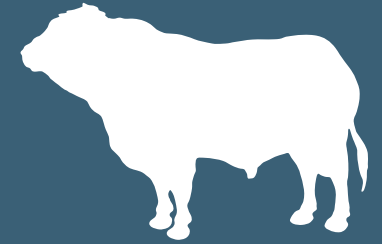
- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools

Risk  
assessment  
table

Disease  
management  
Review

# Leptospirosis

Beef



## Step 2



CURRENT  
MANAGEMENT

OTHER MANAGEMENT  
OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--

- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools

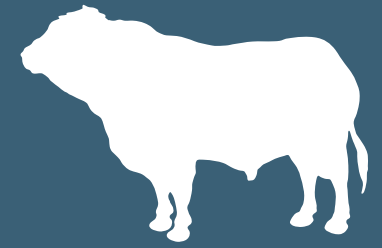


**Further information**

Heuer C, Benschop J, Stringer L, Collins-Emerson J, Sanhueza J, Wilson P. Leptospirosis in New Zealand – Best Practice Recommendations for the use of vaccines to prevent human exposure. A Report by Massey University Prepared for the New Zealand Veterinary Association. June 2012

Risk  
assessment  
table

Disease  
management  
Review



# Step 2

## Theileria



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED:

--	--

- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools



**Further information**

- [nzva.org.nz/theileria](http://nzva.org.nz/theileria)
- McFadden A, Pomroy B, Marchant R, Heath A, King C, Lawrence K, MacPherson N. Farm management strategies to mitigate effects of Theileria-associated bovine anaemia. Vetscript, Volume 27, Issue 6, Pp 20–23, July 2014

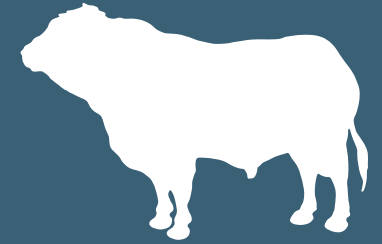
Risk  
assessment  
table

Disease  
management  
Review



# Bloat

Beef



## Step 2



CURRENT  
MANAGEMENT

OTHER MANAGEMENT  
OPTIONS

COST vs BENEFIT

AGREED MANAGEMENT

FURTHER INFORMATION NEEDED:

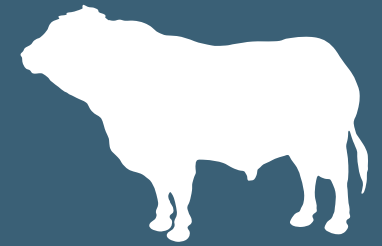
- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools

Risk  
assessment  
table

Disease  
management  
Review

# Breeding soundness

Beef



## Step 2



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

COST vs BENEFIT

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED:

--	--

- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools

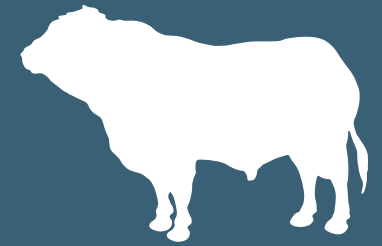


**Further information**

- Beef + Lamb New Zealand 'Managing beef cows prior to and during mating' factsheet
- Beef + Lamb New Zealand 'BCS' resources
- Beef + Lamb New Zealand 'Guide to New Zealand Cattle Farming' resource book
- Beef + Lamb New Zealand 'Better Beef Breeding' resource book
- NZVA 'Service capacity testing of bulls'
- Parkinson TJ and Bruere AN. Evaluation of bulls for breeding Soundness, 2007, ISBN 978-0-9583634-2-0

Risk  
assessment  
table

Disease  
management  
Review



# Step 2

## Painful husbandry procedures



CURRENT MANAGEMENT

OTHER MANAGEMENT OPTIONS

--	--

AGREED MANAGEMENT

--	--

FURTHER INFORMATION NEEDED

--	--

- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools



**Further information**

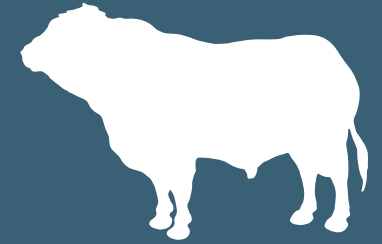
- Beef + Lamb New Zealand 'Painful husbandry procedures in cattle' Factsheet

Risk assessment table

Disease management Review

# Other

## Beef



# Step 2



CURRENT  
MANAGEMENT

OTHER MANAGEMENT  
OPTIONS

COST vs BENEFIT

AGREED MANAGEMENT

FURTHER INFORMATION NEEDED:

- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools

Risk  
assessment  
table

Disease  
management  
Review

# Biosecurity

## Animal Health forms an integral part of an on-farm biosecurity plan.

### *The importance of on-farm biosecurity*

On-farm biosecurity is an important link in the integrity of our country's overall biosecurity. By taking steps to protect your farm business, you are also helping to protect the primary industry, the environment, animal welfare and the New Zealand economy.

The work done during this Health Review process so far is useful when formulating or revising your own biosecurity plan. Similarly, formulating an on-farm biosecurity plan can help crystallise future health management decisions. The two plans are synergistic and should be reviewed together.

The key intervention points of an on-farm biosecurity plan:

1. Livestock movements
2. Animal Health Management
3. People and equipment
4. Feed and water
5. Pest control
6. Animal waste and carcass management
7. Shared knowledge and understanding

# Biosecurity

## Step 2

Internal parasites  
Trace element deficiencies  
Facial eczema  
Metabolic  
Clostridial  
BVD  
Leptospirosis  
Theileria  
Bloat  
Breeding soundness  
Painful husbandry procedures  
Other  
Biosecurity  
Biosecurity tools

Risk  
assessment  
table

Disease  
management  
Review

# Biosecurity

Pan-industry initiatives have led to a wealth of tools to help farmers develop robust biosecurity plans. Seek the advice and support of rural professionals to create a comprehensive biosecurity plan for your farm. Make it part of your culture, and lead by example.



## Tools

### Biosecurity Learning Module

<https://beeflambnz.com/knowledge-hub/module/farm-biosecurity>

### Biosecurity Guidelines

<https://beeflambnz.com/knowledge-hub/PDF/FS067drystock-biosecurity-guidelines>

### Biosecurity Farm Plan

<https://beeflambnz.com/knowledge-hub/PDF/biosecurity-farm-plan.pdf>

Further resources, podcasts and tools on the Beef and Lamb Knowledge Hub

[https://beeflambnz.com/knowledge-hub/search?term=biosecurity&field\\_topics=All&type=All](https://beeflambnz.com/knowledge-hub/search?term=biosecurity&field_topics=All&type=All)

# Biosecurity

## Step 2

- Internal parasites
- Trace element deficiencies
- Facial eczema
- Metabolic
- Clostridial
- BVD
- Leptospirosis
- Theileria
- Bloat
- Breeding soundness
- Painful husbandry procedures
- Other
- Biosecurity
- Biosecurity tools

Risk  
assessment  
table

Disease  
management  
Review

## So far...

You have assessed the risk for each disease for your farm, made decisions on how you will manage these risks for the season ahead and understand the importance of on-farm biosecurity. Often more information may be needed to help you make a final decision. This workbook can be updated regularly as new information and monitoring results become available and progress is made.

The next stage of the workbook documents who will be responsible for the management actions you have agreed.

# Step 2

## Step 2 complete.

Don't forget to save as you go!

Risk  
assessment  
table

Disease  
management  
Review

# Actions – Plan, do, review

This last step involves pulling together the actions from the previous steps. It is highly recommended you create the following:

1. Action summary – use the following pages to capture any immediate agreed actions (i.e. a 'to-do list')
2. Report
  - A summary of details in the workbook
  - A summary of each disease relevant to your farm agreed management and monitoring
3. Health and management calendar
  - Key dates and interventions, to ensure nothing is missed
  - Include dates for reviewing the plan



## Step 3



Action  
Summary

Review



# Action summary

Use the action summary table below to capture what the agreed actions are. Include actions for management changes, monitoring and finding out more information.

## Step 3



What	Who	When	Done	Notes
<i>Example line: Book in Liver biopsies</i>	<i>Vet Richard</i>	<i>April</i>		<i>Richard to ring Bob with dates</i>



# Action summary table (page 2)



What	Who	When	Done	Notes

**Step 3**



# Review

The value of health planning comes with analysing the outcomes of the health interventions to check their effectiveness. This should be an ongoing discussion with your vet. For example you might choose to meet with your vet quarterly to have a planning discussion about the key health management areas in the upcoming quarter.

Often there will be changes to the plan from year to year, as actions are completed and circumstances change. Reviewing your health management every year allows plans to evolve and grow as progress is made.



- Farmer review of action plan
- Dates:
- Next Health Review with vet
- Dates:

## Step 3

Action  
Summary

Review

**Step 3 complete.  
Don't forget to save!**

Notes:



A large, empty white rectangular area intended for taking notes, occupying the central portion of the slide.

The development of this course was made possible with funding from the Passion2Profit (P2P) programme – a primary growth partnership between Deer Industry New Zealand (DINZ) and the Ministry for Primary Industries, and funding from the Red Meat Profit Partnership (RMPP) – a primary growth partnership programme that is working to improve the way that information and knowledge is shared among farmers to support best practice in the sheep and beef sector and drive sustainable productivity improvements to deliver higher on-farm profitability.

This workbook has been produced with acknowledgements to Kate Griffiths from Massey University. The Sheep & Beef Cattle Health Review workbook is based on the Deer Health Review workbook that was developed and produced by the Passion2Profit programme – thanks to Lorna Humm (Health Project Manager) and DINZ for allowing us to modify the deer workbook for sheep and beef cattle.



RMPP Partners

