



May 2014
THE QUEST TO FIND FOOTROT-FREE
FINE-WOOL SHEEP CONTINUES!

FeetFirst

Dr Mark Ferguson

Sampling

The FeetFirst teams have been busy working with growers tagging sheep and taking DNA samples over the warmer months.



We are very grateful to all of the growers who have committed their sheep to the project and worked with the FeetFirst teams to ensure that the dataset is as robust as possible.

We are still working towards a target of 8,000 samples (from 100 properties) from a range of footrot challenge environments. Samples will be taken from 4,000 sheep with footrot and from 4,000 sheep that do not have footrot.

Currently, we have complete sets of samples from 39 properties across the South Island, where both the ‘clean’ sheep (those without footrot) and the infected sheep have been sampled.

In addition, another 21 properties have had DNA samples taken from their infected sheep. It is now a waiting game until the next footrot challenge occurs on those properties. Once the ‘clean’ sheep have been exposed to another footrot challenge, and remained footrot-free, DNA samples will be taken.

Also, a big thank you to all growers that have said they would like to participate, but have been fortunate enough to avoid a footrot challenge this season. Please keep your FeetFirst vet or

Brenna Sharland updated with any change in your flock’s footrot status.

If you suspect a footrot outbreak, especially after the rain that many regions have enjoyed this autumn, please contact Brenna Sharland (on 03 335 0911) as soon as possible to arrange a visit from one of our FeetFirst teams.

WHO CAN BE INVOLVED?

If you can tick all of these boxes, you can (and should) be involved in FeetFirst:

- ☐ I have a mob of sheep with footrot.
- ☐ The sheep have not received footvax in the previous 12 months.
- ☐ The sheep have not been treated with an antibiotic in the previous 2 months.
- ☐ They are at least 6 months old.
- ☐ There are times through the year that the sheep go for greater than 4 weeks without a footbath.

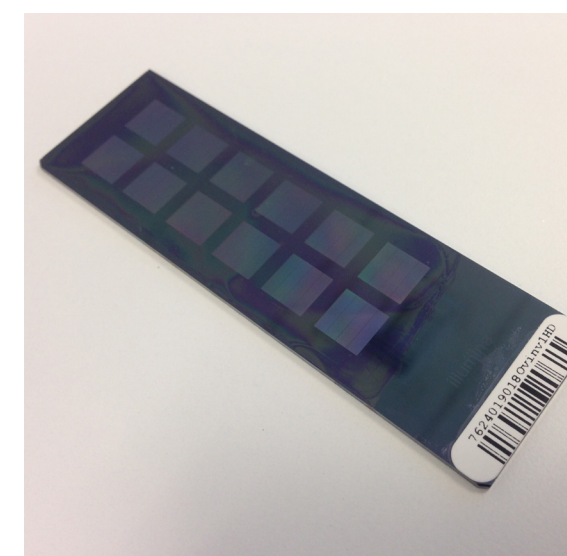
Protocol

There is a full protocol available to interested growers. Please contact Brenna Sharland if you would like a protocol emailed or posted to you (03 335 0911 or brenna.sharland@nzmerino.co.nz).

Genotyping

The DNA samples that have been taken are being genotyped on 50K SNP chips at AgResearch, Invermay. The information from each sheep will be incorporated into the Australian Merino Select database to create genomic breeding values for footrot. On each SNP chip, there are 50,000 evenly spaced points across the sheep’s DNA, which are read by a computer. The variations between these points (from the non-infected and infected populations) will be compared and can be used to predict the likelihood of an individual sheep developing footrot.

The first set of samples will be genotyped by AgResearch in June. This will provide the first indication of any genetic difference between the samples from the non-infected and infected populations.



Ovine 50K SNP chip

Further information

Further information about FeetFirst, including a summary of the FeetFirst sampling protocol, can be found at www.perfectsheep.co.nz/animal-health/feetfirst.

RELATED PROJECTS

Ram Footrot Challenge

The Ram Footrot Challenge project involved almost 700 rams from across the New Zealand fine wool industry. Unsold two-tooth rams from the 2013 ram selling season were taken to an AgResearch farm at Winchmore near Ashburton and exposed to an extreme footrot challenge. The trial ran for a year, ending in March 2014.

At the end of the project, only a very small fraction of the original rams had remained footrot-free throughout. Semen has been collected from the 11 most promising rams (based on a count-back of their foot scores throughout the trial, plus foot conformation, overall conformation and suitability to the industry – particularly their wool quality).

Five of the most promising rams that survived the Ram Footrot Challenge have been used at the central progeny test (CPT) being managed by NZM, to test the ability of each sire to pass on superior footrot resistance to his progeny. Further information about the CPT can be found at www.perfectsheep.co.nz/genetics/central-progeny-test.

Validation of the Lincoln University Footrot Gene Marker Test

An important aspect of the footrot projects is determining the future role of the existing footrot gene marker test (FGMT) developed by Jon Hickford more than 15 years ago.

To this end, samples from all of the Ram Footrot Challenge rams have been tested by Lincoln University. An analysis is currently underway investigating the correlation between the FGMT result and the performance of the ram in the Ram Footrot Challenge. The results of this analysis will be provided to industry once completed.

The next step is to submit samples to Lincoln University from the rams used in the first year of the CPT, and test the footrot resistance of their progeny. We look forward to providing you with further updates on this project in the future.

A Guide to the Management of Footrot in sheep

While the focus of most of the projects is on finding a genetic (or genomic) solution to eliminate footrot, we are also working closely with industry experts to ensure that growers have the most up to date information about the existing tools for fighting footrot.

An updated edition of Chris Mulvaney’s best-practice manual, *A Guide to the Management of Footrot in Sheep*, has been published and distributed to growers. If you have not yet received a copy of the manual, please contact Brenna Sharland (brenna.sharland@nzmerino.co.nz) to request a copy of this useful guide.

CONTACT

If you have any questions about any of these projects, please feel free to contact:

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