

Understanding Lameness in Sheep Flocks: Causes, Management, and Production Effects

Jake Delaney, Emmet Kelly,
Jonathan Molloy and Frank Campion



Main Questions

- How much lameness is in Ireland
- Lameness types within flocks
- How lameness is treated & controlled
- Are we using 'best practice' when it comes to lameness
- Production effects of lameness



What the study looked at

Study 1

Lameness Survey

- Nationwide survey of infectious lameness management
- Treatment practices: antibiotics and foot bathing
- Flock prevalence and lesion recognition
- Current control on Irish sheep farms

Study 2

Production Impact Study

- Eight BETTER farm flocks across Ireland
- Flock prevalence and lameness types
- Ewe and lamb performance data
- Impact of infectious lameness on performance

What data did we have ?

400

**farmer
surveys**

Capturing
management,
treatment
choices and
lameness recognition

8

farms

Spread across the
country

3,500

**Ewe
records**

Aproximately 1,200
ewes each year
across
two years

3,000+

**Lamb
records**

Over 2,000 lambs
each year across
two years

National lameness survey

Key survey findings

6% National reported prevalence

49% CODD present on farm

Scald Highest burden reported

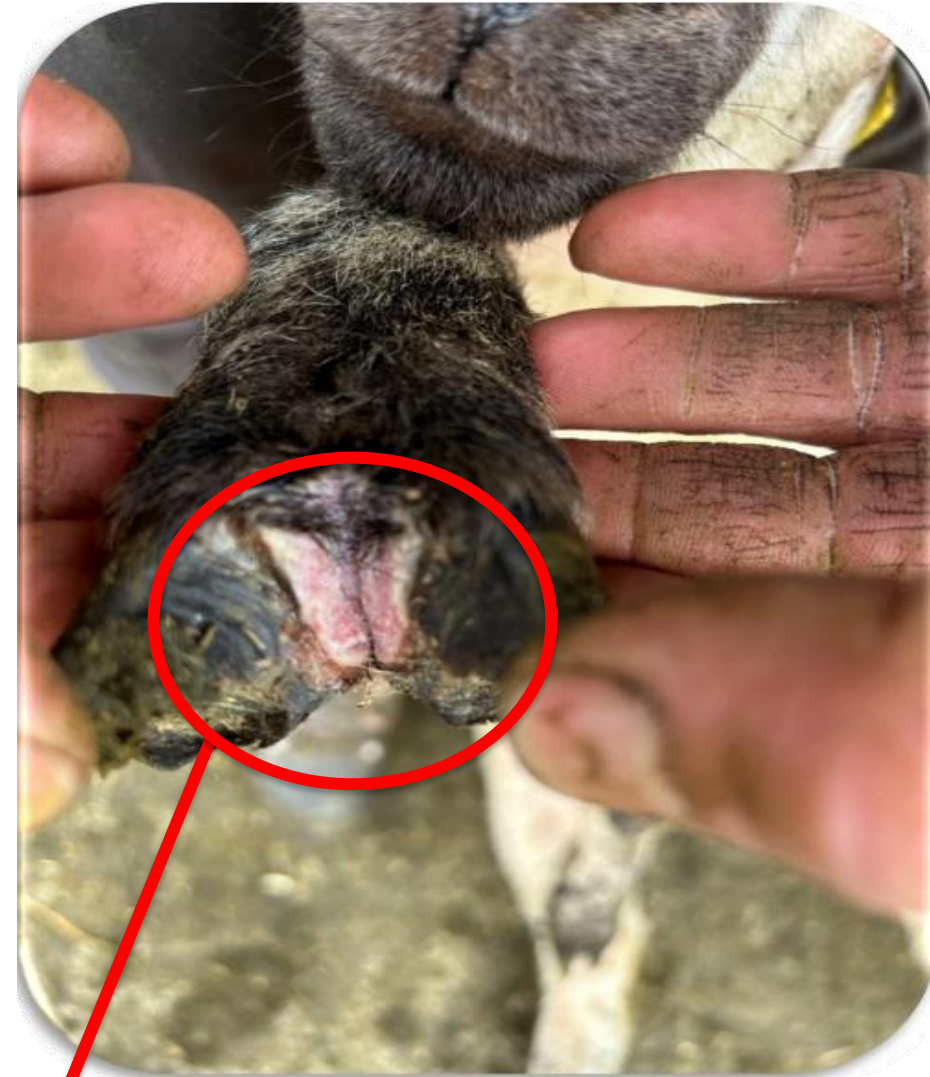


Causes of lameness



Scald (Interdigital Dermatitis)

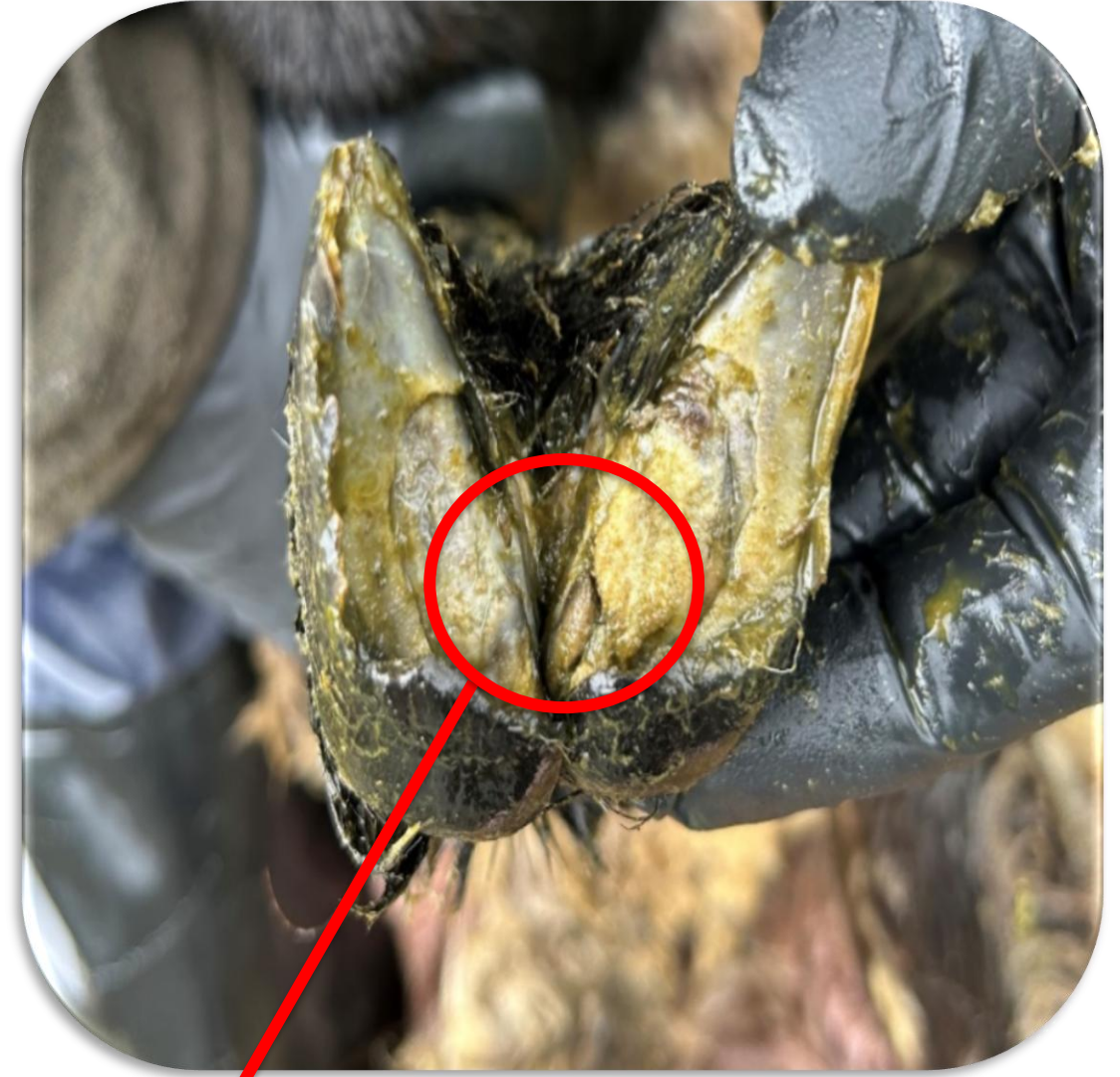
- **Cause:** *D. nodosus* (bacteria)
- **Signs:** red, inflamed skin, white discharge
- **Spread:** highly contagious; rapid flock spread
- **Impact:** can infect all feet in lambs; severe lameness
- **Entry point:** micro-abrasions required
- **Prevalence:** 95% of farms



Interdigital skin inflamed

Footrot

- **Cause:** *D. nodosus* (bacteria)
- **Signs:** foul smelling, “cheesy” sole, white/yellow discharge
- **Spread:** infection tracks under the hoof
- **Link with scald:** often preceded by, or present alongside, scald
- **Prevalence:** 90% of farms



Under running / discharge

Contagious Ovine Digital Dermatitis (CODD)

- **Presentation:** Hoof capsule appears ‘pushed off’ from top (coronary band) down.
- **Progression:** may loosen or detach one or both hoof capsules
- **Awareness:** often mistake for severe footrot
- **Treatment:** foot-bathing is ineffective for CODD
- **Prevalence:** 49% of farms



Coronary band hair loss / lesion

Time is of the essence



-Scald-
Easy & quick to
treat



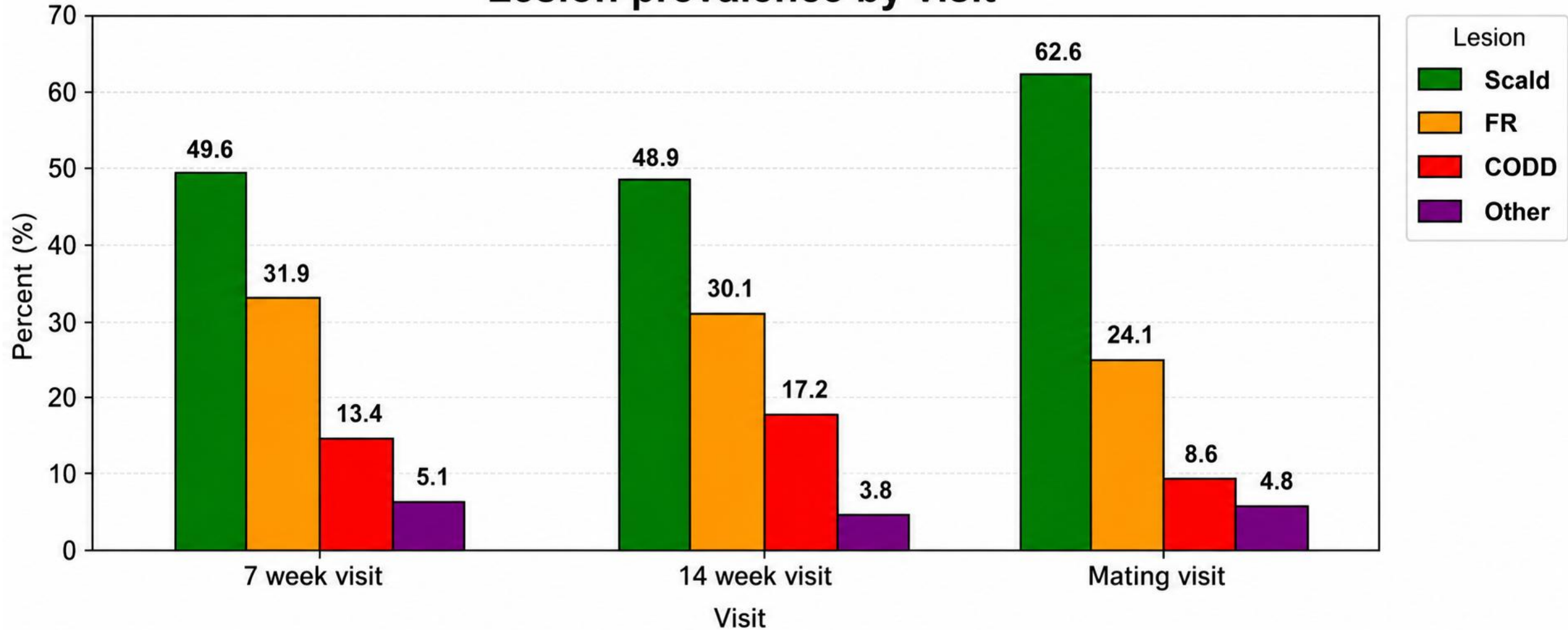
-FR-
Difficult and
time consuming
to treat



-CODD-
Very difficult
and expensive
to treat

Lesion Breakdown

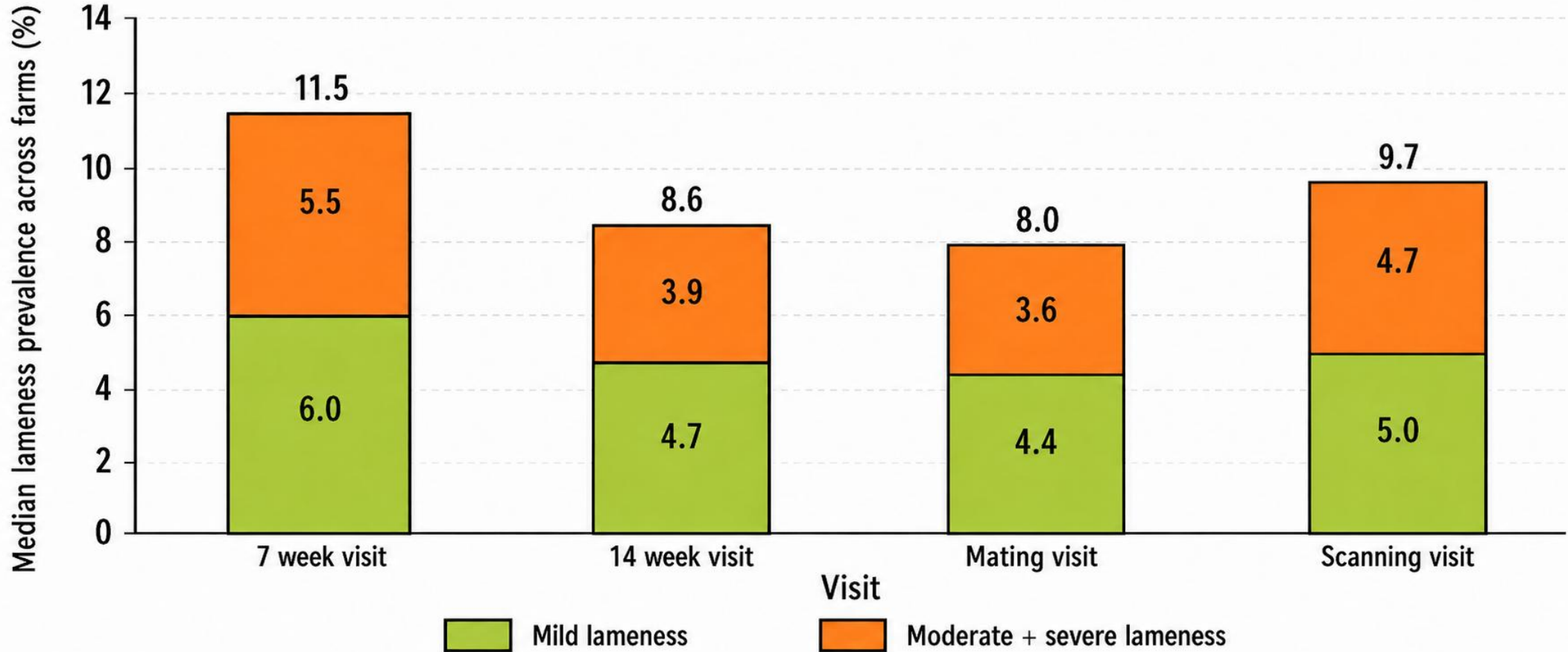
Lesion prevalence by visit



Lameness Prevalence

Median ewe lameness prevalence across farms by visit

Proportion of mild and moderate/severe lameness cases



Ewes – Body condition score

- High variability between farms experiencing **negative** BCS impact from lameness events (**0.13-0.41**)
- Trend towards higher lameness severity causing greater negative impacts
- Both **mating and mid pregnancy BCS** negatively affected by lameness

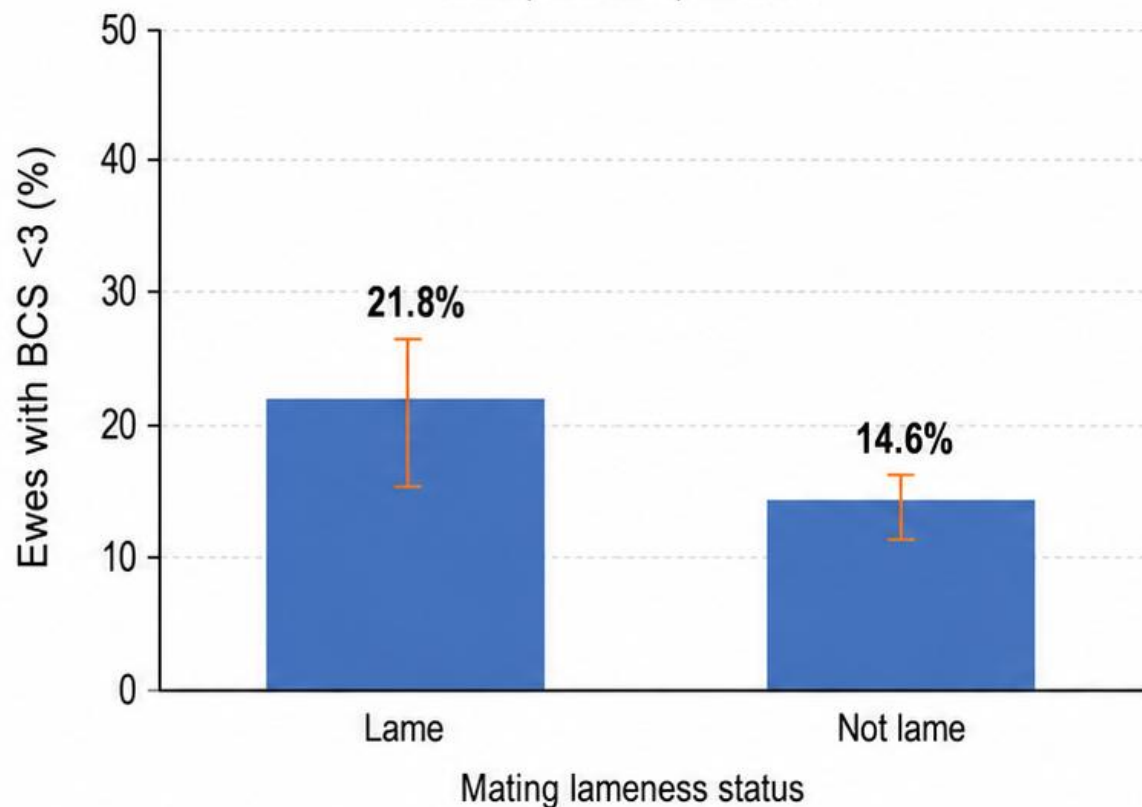


BCS <3 by lameness status at mating and mid-pregnancy

Higher prevalence of BCS <3 in lame ewes at both timepoints

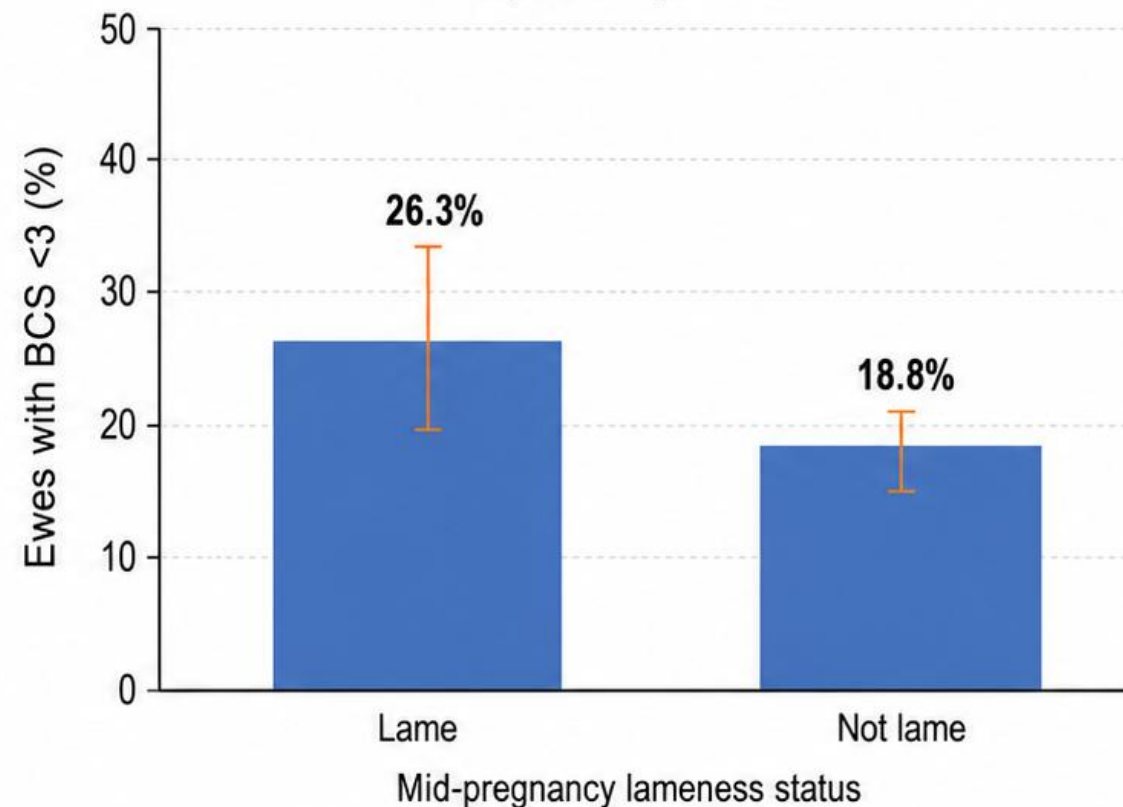
At mating

Chi-square test: $p = 0.0276$



At mid-pregnancy

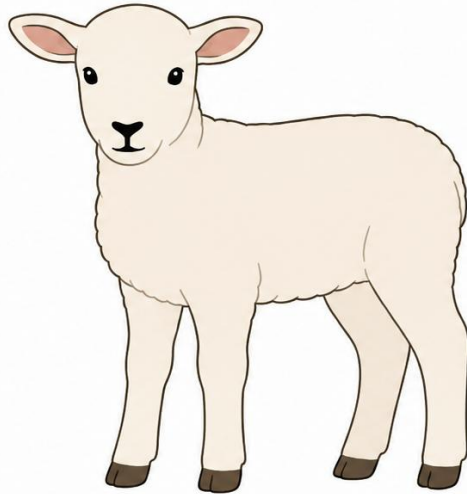
Chi-square test: $p = 0.0179$



Lambs - growth rate

Negative impacts increase as severity increases

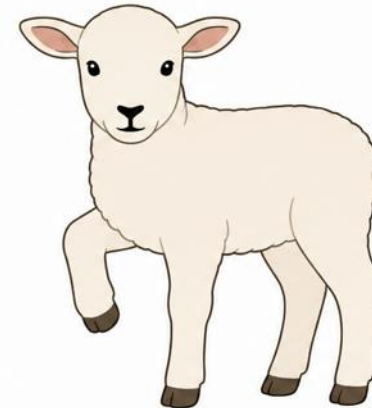
Non lame lamb



-10.0 g/day

1 kg lighter at weaning

Lame lamb



~ Extra 7 days to slaughter

So, what can we do about it ?



Foot-bathing

1

Disinfect

Key disease control point

2

Reduce spread

Density = disease spread

3

Support cure

Cures mild to moderate ID cases and complements antibiotics

4

Allow contact time

Standing time in zinc- and copper-based footbaths is key



Foot bathing

**Solution used:
Zinc/Copper
sulphate – 47%
Formalin 20%**



**24% - stand
for over 30
min post
footbath**

**25% - don't
use footbath**

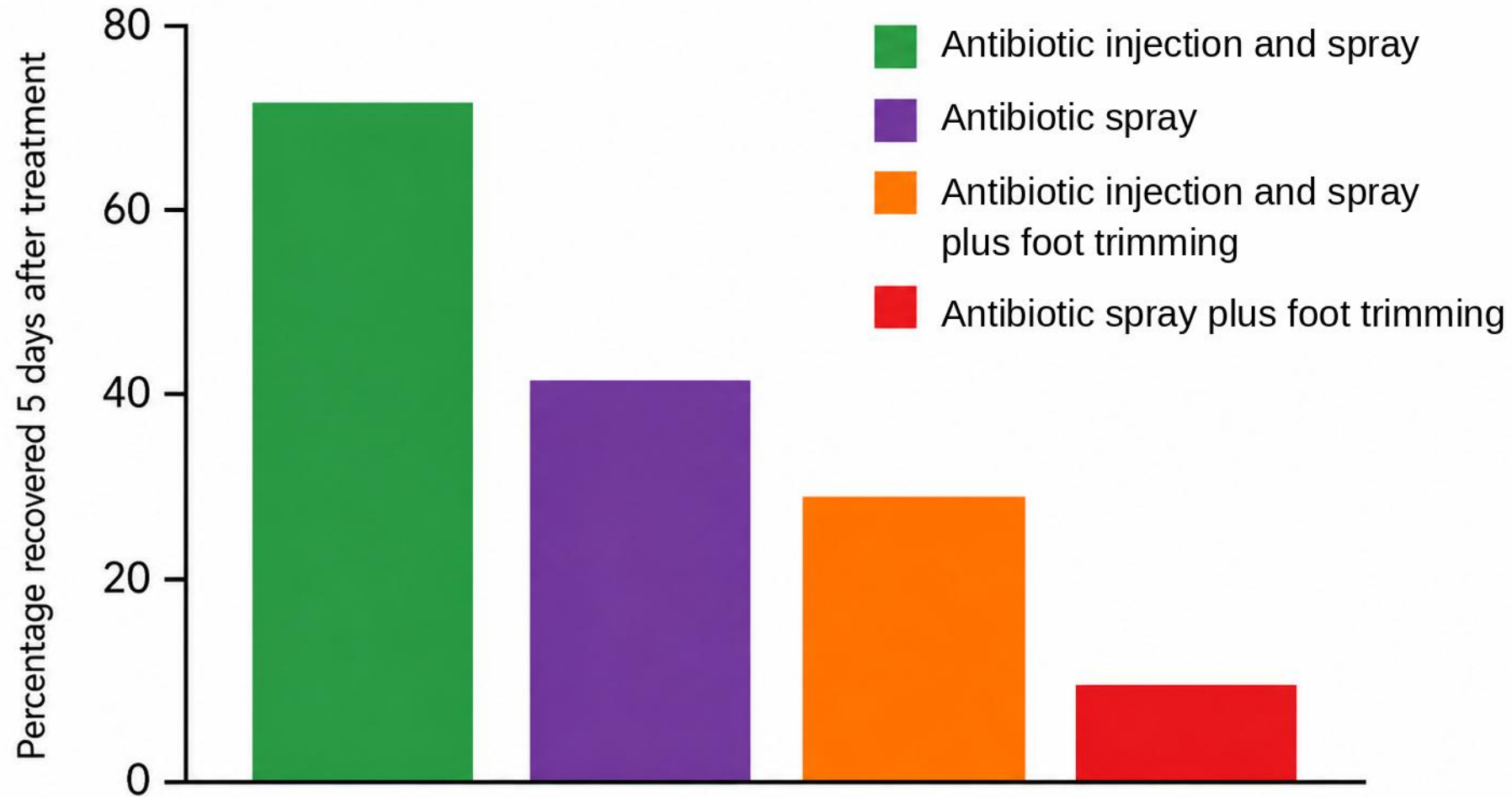
**6% -
standing for
15+ min**

Stop trimming hooves

- **53%** of survey respondents reported to trim hooves of FR diseased sheep
- **Routine trimming** leads to increased:
 - Lameness prevalence
 - Time to cure (infectious lameness)
 - Secondary infection risk
 - Disease spread
- **Our studies** have shown a significant likelihood for **increased lameness prevalence** when trimming to treat infectious lameness.



Effect of foot-trimming on FR cure rates



(Kaler, 2010)

Prompt treatment

- Delaying treatment of lameness leads to
 - Disease spread
 - Disease severity
 - Reduced response to treatment
- **Our studies** have shown a significant likelihood for **increased lameness prevalence** when treatment is delayed over 1 week



'Re-stitching'

Isolation

- **Isolation is underused on Irish farms**
- **48%** reported purchasing replacement breeding females (**increased lameness prevalence**)
- **19%** did not isolate bought-in stock
- **63%** isolated for less than 1 month

Main risk:

- Introduction of new diseases, including **CODD**



Workshop

- Identifying lameness types
- Locomotion scoring
- Foot bathing
- Treatment



Conclusions

- Lameness impacts:
 - Ewes – lame ewes are more likely to be thin (< 3 BCS)
 - Lambs – Lame lambs lighter at weaning
- **Prompt treatment and isolation of lame sheep** is vital to both minimise the potential welfare impact and limit disease progression and spread
- Effective quarantine measures – **If you don't have it – Don't bring it in**

