



# Incidence of infectious and non-infectious feet lesions and their association with carcass quality in sheep at a slaughter plant in Alberta, Canada

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## Introduction

- Infectious and non-infectious feet lesions (FL) in lamb feedlots have been associated with reduced welfare, production, carcass and meat quality.
- To date, the incidence of FL in sheep and the relationship with carcass quality has not been documented in Canada.

## Objectives

The objectives of this study were to:

- 1) Determine the incidence and type of lesions in Alberta sheep at slaughter and
- 2) Determine the relationship between FL and carcass quality.



Figure 1. Infectious (left) and non-infectious (right) feet lesions.

## Material and Methods

- **Sheep carcasses:** a total of 4,487 carcasses were assessed at a slaughter plant in AB, between October 2017 and March 2019.
- The hooves and limbs of ~300 sheep were assessed for infectious (IN) and non-infectious (NIN) lesions by 2 experienced researchers during monthly visits to the plant.
- **Carcass information:** back fat thickness (BFT) and hot carcass weight (HCW) of sheep with FL in at least one foot were obtained in the slaughter plant records.
- **Statistics:** Data was analyzed by generalized linear models using SAS PROC GLIMMIX.

## Results

- FL incidence **9.4%**

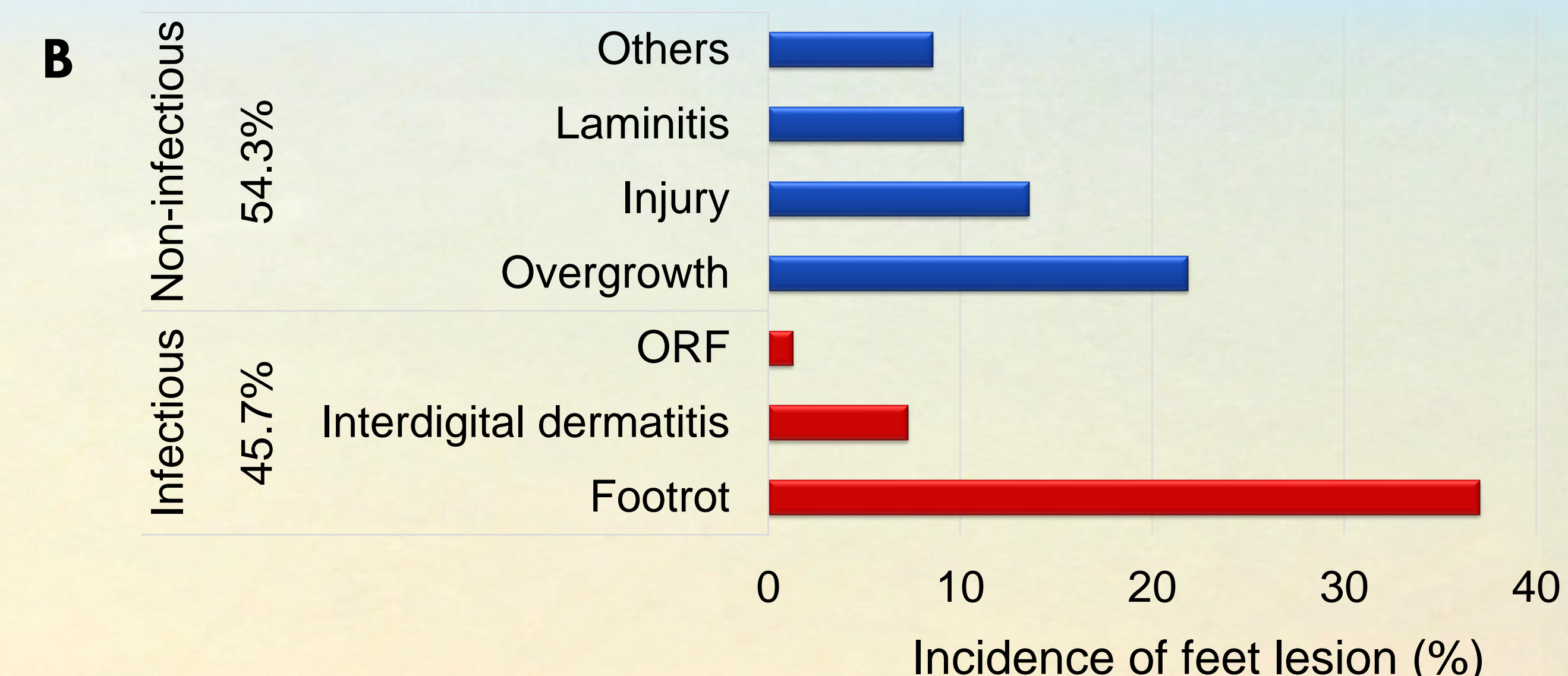
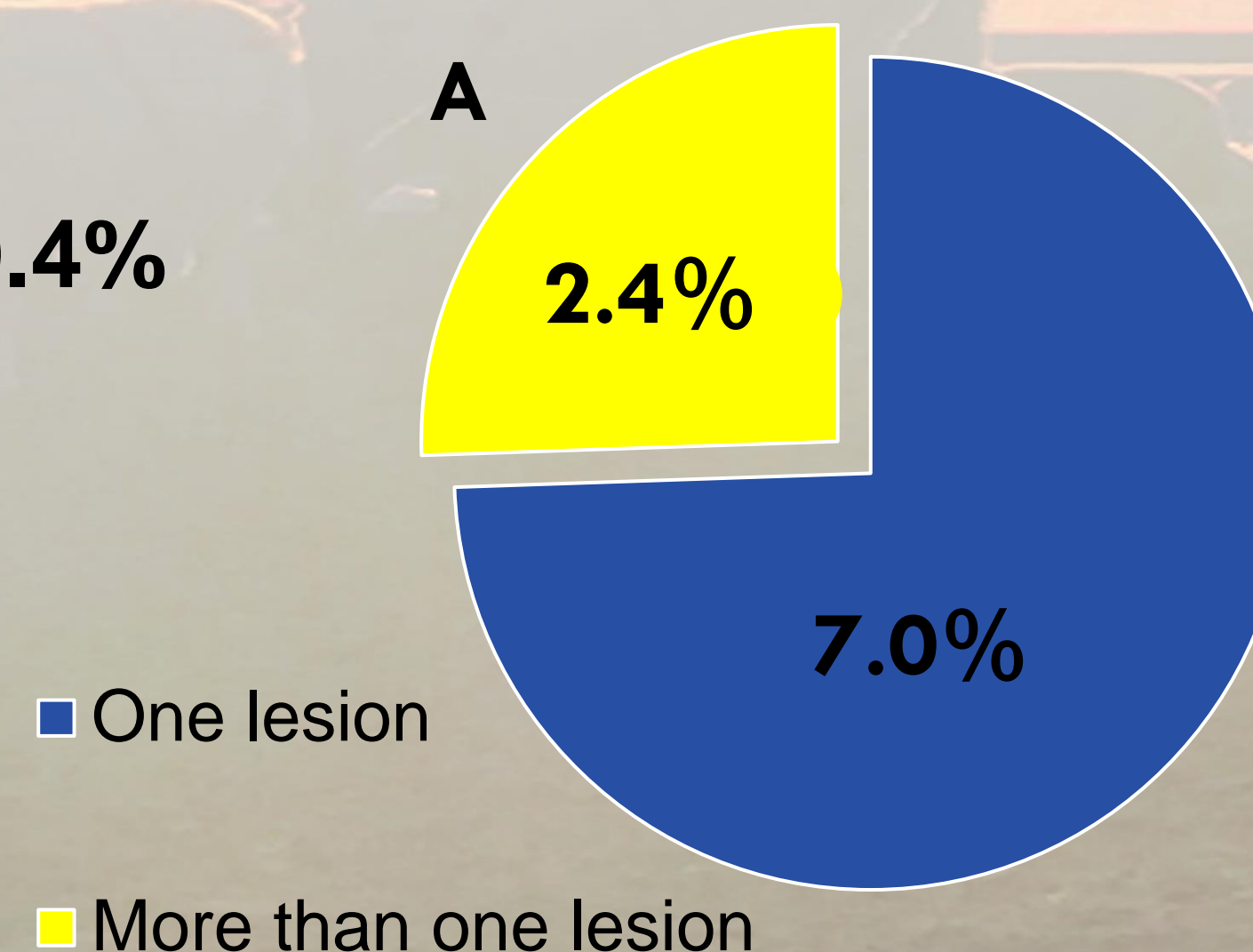


Figure 2. (A) Incidence of sheep feet lesions (%) and (B) incidence of feet lesion by etiology and type at a slaughter plant in Alberta, CA.

- Sheep with IN had lower BFT ( $13.5 \pm 1.32$  cm,  $p = 0.0002$ ) and HCW ( $51.5 \pm 1.89$  kg,  $p = 0.0189$ ) than NIN ( $15.8 \pm 1.51$  cm and  $54.7 \pm 1.97$  kg, respectively).
- For every 1 cm decrease in BFT and 1 kg decrease in HCW the odds of IN increased by 0.89 ( $p < .0001$ ) and 0.98 ( $p = 0.0229$ ), respectively.

## Conclusion

- Feet lesions are a significant issue for the Canadian sheep industry.
- Sheep with infectious lesion had reduced carcass quality compared to those with non-infectious lesions.
- Further studies assessing more carcass traits on sheep from multiple plants are needed to better understand the relationship of carcass quality and feet lesion.