

Foot Lesions in Alberta Dairy Cattle

UCVM Lameness Team

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Why is this important?

Over the last years our group at UCVM has increased its research focus on lameness in both dairy and beef cattle. Lameness in dairy cows affects animal welfare, milk production and reproduction, with ~90% of lameness attributed to foot lesions. The prevalence and type of foot lesions varies according to country, region, housing, management, etc.

What did we do?

A study was conducted to determine prevalence and distribution of foot lesions, in addition to factors that could affect prevalence of such lesions in dairy cows in Alberta. Seven hoof trimmers participating in the Alberta Dairy Hoof Health Project used specialized lesion recording software (Hoof Supervisor) to record the type and location of foot lesions. Specific lesion locations were recorded (front/rear, left/right foot; inner/outer claw; and claw zone).

To ensure consistency in lesion identification amongst the hoof trimmers, a 1-day clinic was held and colour photographs used to describe the type and severity of various foot lesions (the clinic was repeated after 1 year). Data were collected over 3.5 years on a total of 156 dairy farms in central and southern Alberta. The original dataset contained 87,834 cows with data from multiple trimmings, with lesions recorded on 28,607 unique cows (20,587 and 8,020 from farms with partial or whole-herd [>80%] trimmed). The trim records were combined with information on parity, DIM and milk production provided by DHI.

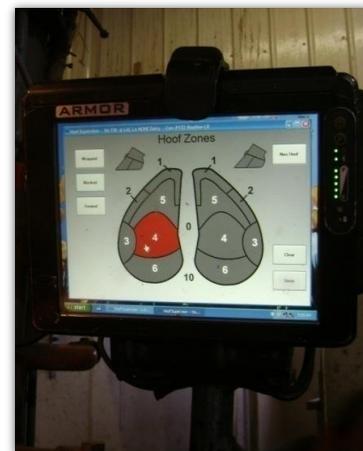


Figure 1: Lesion recording on-farm.

What did we find?

Overall, 36% of cows had at least 1 foot lesion, 26% of cows affected in 1 leg, 9% in 2 legs, and 1% in 3 or more legs. Overall, lesions were more common in rear than in front feet, although claw horn lesions were more common in front feet compared with infectious lesions. Approximately 75% of claw horn lesions and 94% of digital dermatitis lesions occurred in rear feet. Claw horn lesions were more common in front medial claw and in rear lateral claw. On farms in which the entire herd was trimmed, digital dermatitis was the most common lesion (15% of cows and 94% of herds), followed by sole ulcers (6% of cows and 92 % of herds) and white line disease (4% of cows and 93% of herds). Other infectious and claw horn lesions each affected 1 to 2% of cows and 62 to 78% of herds.

Prevalence of digital dermatitis decreased with increasing parity, but this effect was influenced by days in milk.

Primiparous cows were more likely to have digital dermatitis in mid- (100 to 199 DIM) and late-lactation (≥ 200 DIM) compared to cows at other stages of lactation. However, prevalence of sole ulcers and white line disease increased with increasing parity; compared to primiparous, those in 4th lactation were 5 to 7 times more likely to have these lesions, respectively. Cows in mid- and late-lactation had higher odds of sole ulcers and white line disease than cows at other stages of lactation.

Digital dermatitis prevalence was 2 times higher in herds housed in barns with access to an exercise area. The odds of sole ulcers and white line disease were more than twice as high in cows housed in free-stalls versus deep-bedded packs.

What does this mean?

From the analysis of this extensive dataset, we have learned that prevention should focus on control of digital dermatitis especially in cows in their first lactation and on farms with exercise areas. In addition, improving housing environment by providing a deep-bedded area for older cows in mid- or late-lactation could reduce prevalence of claw horn lesions. The team will continue its endeavor combating lameness in cattle; we'll keep you posted.

Summary Points

- Hoof trimmers recorded the type and location of foot lesions on 156 farms
- 36 % of cows trimmed were affected with foot lesions and digital dermatitis was the most common
- Digital dermatitis was 2 times higher in barns with access to an exercise area (regardless of housing type)

For more information please go to: <http://wcm.ucalgary.ca/orselresearch/what-we-do/lameness>



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