



Lameness and lesions must wane

While lameness scores vary by region, we all must make significant progress.

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PRODUCERS spend millions of dollars on facilities, with the aim of providing a comfortable environment for their cows. Unfortunately, housing does not always function well from the cow's perspective. Poorly designed and maintained facilities can cause injuries and elevate the risk of lameness and hock lesions. Lameness is now widely acknowledged as one of the most important welfare and production problems. Skin injuries on dairy cows should raise similar concerns but have received much less attention.

Such injuries tend to occur on areas that are in contact with housing elements, with the most common injuries observed on the knees and hocks. These injuries range from a small area of hair loss to open wounds and are sometimes accompanied by infection and swelling of the joint. Unlike lameness, hock lesions are obvious and can be easily assessed.

Benchmarking is one method that can be used to promote the adoption of best practices. The University of British Columbia's (UBC) Animal Welfare Program has partnered with key players in the BC dairy industry and Novus International Inc., to benchmark measures related to cow comfort as well as facility design and management.

In this article, we will share the lameness and hock injury data collected from 42 farms in BC, 39 farms in California (CA) and 40 farms in the Northeastern U.S. (New York, Vermont and Pennsylvania; NE). Each farm was visited twice.

Lameness prevalent in NE

During the study, cows were scored as not lame (gait score less than 3 on a 1 to 5 scale), clinically lame (gait score greater than or equal to 3) or severely lame (gait score of 4 or 5). A total of 17,887 cows were gait scored.

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The three regions varied in rates of lameness. Prevalence of clinical lameness averaged 28 percent in BC, 31 percent in CA, and 55 percent in the NE (blue lines in figure). The prevalence of severe lameness averaged 7 percent in BC, 4 percent in CA and 8 percent in the NE.

More importantly, within each of the regions, lameness varied greatly between farms. This shows the potential for sharing best practices for lameness prevention, particularly within a region where producers share similar opportunities and constraints.

Facilities impact incidence rates

A second aim of our work was to identify housing and management options that lead to lower rates of lameness. Variation in lameness can be explained in part by how barns are designed and managed, but these factors vary among regions.

For example, in BC we found that the mean prevalence of severe lameness was higher on farms where cows were on mattresses (9 percent of cows severely lame) versus farms that use deep-bedded stalls (4 percent of cows severely lame). We also found differences in factors associated with lameness between the NE and CA.

In the NE, the odds of lameness were cut in

BENCHMARKING PROGRAMS not only pinpoint where your dairy is today for foot and leg health but give you a standard of comparison to other operations in your region.

half on farms using deep bedding compared to dairies using mats or mattresses with little bedding. Providing pasture also reduced lameness. All of the CA herds in the study used deep-bedded stalls, and almost all farms provided outdoor access. Likely because of these conditions, rates of lameness were much lower in CA than in the NE.

Within the CA herds, lameness was lowest on farms where stalls were kept clean and on farms that used rubber in the alley leading to the milking parlor. These results illustrate that, when one limiting factor is addressed (by changing from mattresses to deep bedding), new factors can be identified (such as the benefits of rubber flooring).

In both CA and the NE, we found that larger farms had lower rates of lameness. We believe that this positive effect of larger herds may be due to more specialized management.

Measuring lameness takes some effort. Most people with cow experience can identify cows that are severely lame, but identifying clinically lame cattle requires training. Ultimately, producers can gain the most value by becoming competent at gait scoring — you can't manage for lameness unless you can measure it, and routine gait scoring allows you to do this.

Lesions shrink with deep bedding

Approximately 40 cows on each of the farms were also scored for hock condition on a 3-point scoring system where 1 = healthy hock, 2 = bald area on the hock without evident swelling, and 3 = evidently swollen and/or severe injury. We scored the percent of cows with a visible hock injury (score of 2 or greater) and percent with severe injury (hock scored 3).

The prevalence of hock injuries varied among regions, from 42 percent in BC, 56 percent in CA and 81 percent in the NE. The prevalence of severe hock injuries was 4 percent in BC, 2 percent in CA and 5 percent in the NE. Our results show that these injuries are all too common, but within regions some producers were successful in keeping the percent of affected cows low.

Cows were also scored for swollen knees. Injuries were recorded as present or absent. Swollen knees were rarely observed (less than 1 percent) in CA, but relatively common (23 percent prevalence) in the NE. As with lameness, lesion prevalence also varied among farms in each region.

We know from a series of previous studies that the risk of hock injuries can be greatly reduced by using deep bedding and that lesions are more common on farms using poorly bedded surfaces like mats and mattresses. This effect helps explain why lesions are so common in the NE where poorly bedded surfaces are the norm. Our recent work in CA and the NE has also shown that hock injuries are highly dependent upon bedding management.

Most dramatically, in the NE, the use of deep-bedded stalls reduced the odds of hock lesions by 95 percent. Other practices linked to reduced hock injuries included clean bedding, access to pasture during the dry period and avoiding the use of automatic scrapers for manure removal. In CA, hock injuries were far less common, and farms with well-maintained stalls had the lowest rates.

Benchmarking programs like this allow farmers to compare their performance with regional averages and provide a basis for informed discussions. Tailor made solutions can then be developed to address these problems.

