**2013L095D Effectiveness of a standardized footbath protocol in the prevention of bovine digital dermatitis on dairy farms in Alberta**

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Background: Digital dermatitis is an ulcerative lesion that tend to be painful, causing lameness, and thus compromise animal welfare and can decrease milk production and increase culling and treatment costs. Previously, DD was found to be present on 98% of the 86 farms studied and affected an average of 28% of the cows per herd. The footbath in the most common on farm DD control strategy, being used by 95% of producers in Alberta, however, there is a wide variety of footbath protocol from farm to farm.

Objective:

1. Evaluate the impact of a standardized foot bath protocol following the literature recommendations on management and design
2. Estimate the economic consequences of these on-farm actions (cost of footbath use/treatment and efficiency of the herd)
3. To better understand farmers compliance challenges, and attitude and perception towards implementation of a footbath protocol though a questionnaire

Methods: A total of 1,981 cows from 9 different farms were assessed biweekly for DD lesions in the milking parlour for 7 months. After 3 months a standardized footbath protocol was implemented. Scoring of DD lesions in the milk parlour by trained observers was supplemented with the gold standard of hoof trimming at the beginning, middle and end of the trail. Automatic, stainless steel, split-walk through footbaths were installed, consisting of 2 baths separated by a grate (Boumatic). Each bath measured 3m long x 0.25 m wide x 0.15 m tall and held a combined volume of 225 L. Footbaths had a center grate, rubber flooring, side walls and a flush door to prevent manure contamination, and ensure good grip, feet immersion and automatic flushing. All baths were programmed to fill, flush and empty 5% copper sulfate solution. The footbath protocol consisted of weekly use of the 5% copper sulfate solution for 4 consecutive milkings and the footbath contents were replaced every 200 cow passes.

Outcome: Controlling footbath dimensions, along with copper sulfate concentration and frequency of use resulted in a change in DD dynamics. On all farms, the percentage of healthy feet increased from 31 % to 39 %, the percentage of active lesions decreased from 41 % to 25 % and chronic lesions increased from 28% to 35%, before and after intervention, respectively. The cost benefit analysis for the standardized footbaths has yet to be completed. In the questionnaire farmers identified the following factors as issues with their original footbaths: time consuming and labor intensive, management of manure contamination, expensive products, and conflicting advice to develop footbath protocols. The participating farms reported to be very satisfied with the new protocol and found it to be effective to extremely effective in preventing new DD cases.

Recommendation: the use of a standardized footbath protocol reduced active DD lesions that cause pain and lameness in dairy cows and is therefore beneficial to implement. Participating farms found that the new protocol resulted in less time and money spent weekly for footbath management.

Benefit to Industry: This study provided understanding on how to optimize the use of footbath systems and fulfilled a research gap on management practices. It also integrated science-based and economically validated recommendations to develop practical prevention strategies that were feasible for local farmers and resulted in reduced DD.

KTT:

* 1 graduate student, 1 research assistant and 3 undergraduate students trained
* 3 manuscripts for scientific publication prepared
* 6 presentations at conferences and 3 media articles