



Healing SOLES

Canada-wide efforts to quantify hoof health problems are starting to show results by CATHERINE BROWN

THE ALBERTA DAIRY HOOF Health Project is now well underway, reporting high incidence of Digital Dermatitis and claw horn disruption.

The crates of participating hoof trimmers are outfitted with computers and software to record just about everything they find on cows' feet.

By the end of May, 147 Alberta herds and 52 B.C. herds had contributed trim records and DHI data to the project's hoof health database, providing trim records for well over 26,000 individual cows.

Almost half of these cows had one or more of the 14 claw lesions being evaluated by hoof trimmers, according to Dr. Steve Mason, a consultant working with Alberta Milk's Research and Extension Committee, who is leading the project.

Enthusiasm behind the whole initiative has been contagious.

In early June, Mason traveled to Ontario

to meet with industry specialists and the research committee of Dairy Farmers of Ontario (DFO) to discuss the adoption of a similar program.

That meeting resulted in support, in principle, for some type of hoof project in Ontario. There was consensus about the need for novel ways to address lameness issues and there was also a sense of cooperation in terms of developing an action plan and sourcing financial resources.

"The prospect of another province adopting these systems increases the potential to implement a nation-wide data collection network to support the use of lesion data in Dairy Herd Improvement programs and genetic selection indexes," says Mason.

Mason also met with Holstein Canada to discuss pairing classification data with hoof data.

Ontario hoof trimmer Vic Daniel has been involved in the Alberta Dairy Hoof Health

Project as an outside participant. He was the first in Ontario to purchase the computer and software units – called Hoof Supervisor - which tie cow and herd records together with type and incidence of hoof lesions. He received training to use the program through one of the western Canadian training workshops.

The new technology, he says, has allowed him to provide his clients a much more valuable service. It has improved hoof health in chronically affected herds and has allowed Daniel to validate some of his theories about the origins of some foot problems. It has allowed him to better compare herds under different environments and management conditions and to establish benchmarks within and across herds, as reference points for improvement.

Phase One of the Alberta Hoof Health Project, which began in 2008, helped seven local hoof trimmers to pay for the Hoof Supervisor computer technology, valued at about \$6,500 per unit. It also helped to train hoof trimmers to use the program. The equipment was paid for by Alberta Milk and the Alberta Farm Animal Council. Hoof trimmers are also compensated at a level of \$1 per cow, for providing the project with hoof lesion data.

Phase Two of the project involves building a database, for which Dr. Steve Mason is partly responsible, on behalf of Alberta Milk. Phase Three will involve tying the lesion data together with DHI records and on-farm factors such as facilities and management. This phase is supported, in part, by Dairy Farmers of Canada (DFC) and the Alberta Livestock and Meat Agency.

The Alberta project also made possible a series of hoof health workshops for farmers, hoof trimmers and veterinarians, which have been held across western Canada.

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The Hoof Supervisor computer system is used to record data for the Alberta Dairy Hoof Health Project

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purchase of the Hoof Supervisor system for Alberta hoof trimmers, "...hoof trimmers in the rest of the country have been wanting to get in on the project," says Dr. Gerard Cramer, of Cramer Mobile Veterinary Services, which offers specialized cattle foot care services.

While not the only computer software program to record hoof health statistics, Hoof Supervisor has been the program of choice in this project. It uses Hoof Atlas - a standard lesion identification system, which has simplified communication among hoof trimmers, producers, veterinarians and researchers.

Twenty-nine years in development, the Hoof Atlas identification system, was originally devised in the eighties by Dr. Paul Greenough of the University of Saskatchewan's Western College of Veterinary Medicine. It started as an illustrated guide to claw lesions in cattle. Since that time, new claw lesions have been discovered. To assist in the accurate and consistent identification

of lesions, a poster was developed through the combined efforts of Zinpro Corporation and the International Lameness Committee, a collaboration of researchers, veterinarians, academics and hoof trimming professionals from around the world.

Before that time, "the lack of a standardized format had been the Achilles' heel of the industry," says Daniel. "Even vets had three to four different names for the same lesion."

Cramer describes the overwhelming support of the Hoof Atlas lesion identification system as "an agreement to start talking the same language."

The Hoof Supervisor and its use of Hoof Atlas "puts us light years ahead," says Daniel. Hoof Supervisor was created by KS Dairy Consulting in Wisconsin.

While Alberta trimmers were the first in the country to adopt the Hoof Atlas system and Hoof Supervisor technology, seven hoof trimmers in BC have since come on board with the financial support of Westgen, the BC Milk Producers' Association and Investment Agriculture Foundation of BC.

Manitoba hoof trimmer Jamie Sullivan reports that his use of Hoof Supervisor has allowed him to improve record-keeping and better monitor results, resulting in improved "individual cow care" in large-herd environments.

In one particular herd where 98 per cent of cows had some type of lesion and 44 per cent lameness, Sullivan was able to reduce hoof lesion incidence down to 42 per cent and lameness down to four per cent, over a two-year period.

Hoof Supervisor allowed Sullivan to customize a trimming protocol for each of his clients. Now, at the end of each trim session, Sullivan provides his clients with detailed individual cow reports and easy-to-read herd summaries.

Central Alberta hoof trimmer Albert

Koster also uses Hoof Supervisor and participates in the Hoof Health Project. While his day-to-day work has not changed significantly, he says records previously recorded on paper are now accessible to farmers and industry. The computer tells him how many times a cow is trimmed and when she was last trimmed. It allows him to track lesions

on farms and determine whether or not improvements are being made.

Koster points out that previous hoof health research has involved up to 6,500 cows, whereas the Hoof Supervisor system has, within two years, given the industry data on over 26,000 individual cows, to-date.

Ongoing hoof health research in

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Ontario has determined infectious lesions to be common in both tie-stall and free-stall herds. They are twice as prevalent in the free-stall environment, however. The research has contradicted some previously made assumptions, proving that increased lesion prevalence often coincides with increased frequency of alley scraping, spraying of feet and year-round opportunity for exercise.

Research projects have also confirmed the significant effect that hoof trimming can have on the recording of hoof lesions.

University of Guelph Professor of Epidemiology, Dr. David Kelton, is currently overseeing research involving the early detection of lameness using pedometry and cow activity systems.

Another University of Guelph research project, which will begin this

fall, will study genetic determinants of lameness.

On the national front, Dairy Farmers of Canada has allocated funding to a two-year research project aimed at improving cow comfort to increase longevity. This research, which began last year, is examining risk factors that influence lameness and other disorders among dairy herds in Quebec, Ontario and Alberta.

A total of 240 farms are enrolled in the project, representing both tie-stall and free-stall production systems. The Alberta phase of the project will be integrated with the Alberta Dairy Hoof Health Project.

Among other objectives, this national project hopes to develop an evidence-based scoring system for dairy cow comfort, and then examine the extent to which this scoring system can predict

outcomes such as lameness, injury and reduced longevity.

Vic Daniel has established his own benchmark study. Out of 51 client herds that agreed to participate, not a single one was 90 per cent lesion-free two years ago. After implementing new Hoof Supervisor-dictated trimming protocols, four of these herds are now 90 per cent lesion-free.

The technology has helped Daniel improve hoof health in all of his herds by at least 35 per cent, he says. He can put up to 4.5 years of data on the computer, allowing him to do generational studies. Daniel also further validated the theory that increased alley scraping actually leads to more digital dermatitis.

Daniel hypothesized that digital dermatitis is a hoof conformation issue more than it is a result of poor hygiene.

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The data gathered with the Hoof Supervisor to prove this theory, was presented by Daniel to industry groups in both New Zealand and the U.S..

In a recent farm press interview, leading animal welfare expert Temple Grandin pinpointed lameness as the single largest animal welfare issue facing the dairy industry.

Mason, likewise, calls Digital Dermatitis (a.k.a. Strawberry Foot Disease, hairy heel warts, or Mortellaro's Disease) "public enemy number one."

It is by far the most common lesion identified in the Alberta project and is the most common one in Ontario. It is a contagious infection caused by bacteria that thrive in moist, low-oxygen (anaerobic) environments such as manure and wet, contaminated bedding, says Mason. Prevalence of the disease has increased over the years.

Next in order of prevalence in the Alberta and BC cows studied, are four lesions related to "claw horn disruption". These are sole ulcer, white line lesion, sole hemorrhage and toe ulcer. Together, these four lesions account for nearly 42 per cent of all lesions recorded to-date, according to Mason.

Traditionally, these lesions were thought to result from feeding high-energy diets, leading to ruminal acidosis and laminitis, says Mason. More recent evidence suggests that events around calving may cause structural changes in tissues that suspend the pedal bone inside the hoof or in the digital fat pad that provides a cushion under the bone.

It is the transfer of this type of knowledge that will be most valuable to dairy producers, according to Cramer. It is the implementation of practices based

on current, sound knowledge that is lacking, he says.

Lesion prevalence aside, "what is needed at the industry level is a targeted educational and awareness at the producer level," he says.

The challenges that remain with current and proposed hoof health projects relate to interfacing data between DHIs, producers, trimmers and the research community. They involve producer privacy matters and methods of identifying cows efficiently and practically, so producers can recognize them on paper.

The ultimate vision is one of identifying and eliminating hoof health risk factors as much as possible. But there will also be tremendous potential benefit if all that comes from this is trimmers increasing their level of service to their clients, according to Mason. ☐

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