# Hoof Trimmers Attend Hoof University

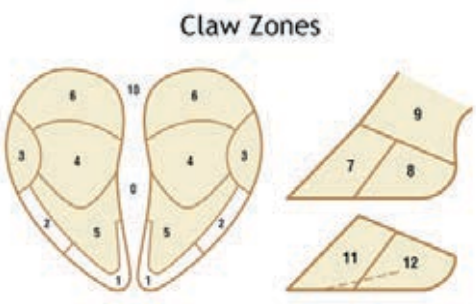
By **Tars Cheema**

Recognized as the #1 animal welfare issue in the dairy industry today, lameness is also likely the most costly issue for producers, especially when including the associated drag on fertility and longevity. The BC Dairy Hoof Health Group, made up of a wide spectrum of industry experts, has taken a pivotal role in leading a number of initiatives to help the industry hobble this 'run-away' problem.

Most recently, a Hoof Health Workshop was held at UBC Dairy Education and Research Centre in Agassiz on January 27. The objective was to present the latest information on hoof disease causes and treatments, to the trimmers who see the challenges up close and personally - on a daily basis! Originally planned for 30 participants, the room was packed with an attentive crowd of 36 *'students'*, made up of 20 hoof trimmers and 16 others (vets, researchers, consultants, UBC students and government personnel). It was estimated that 90% of cows trimmed in BC were represented by the 20 hoof trimmers who attended! That is a remarkable penetration into the dairy barns of BC!

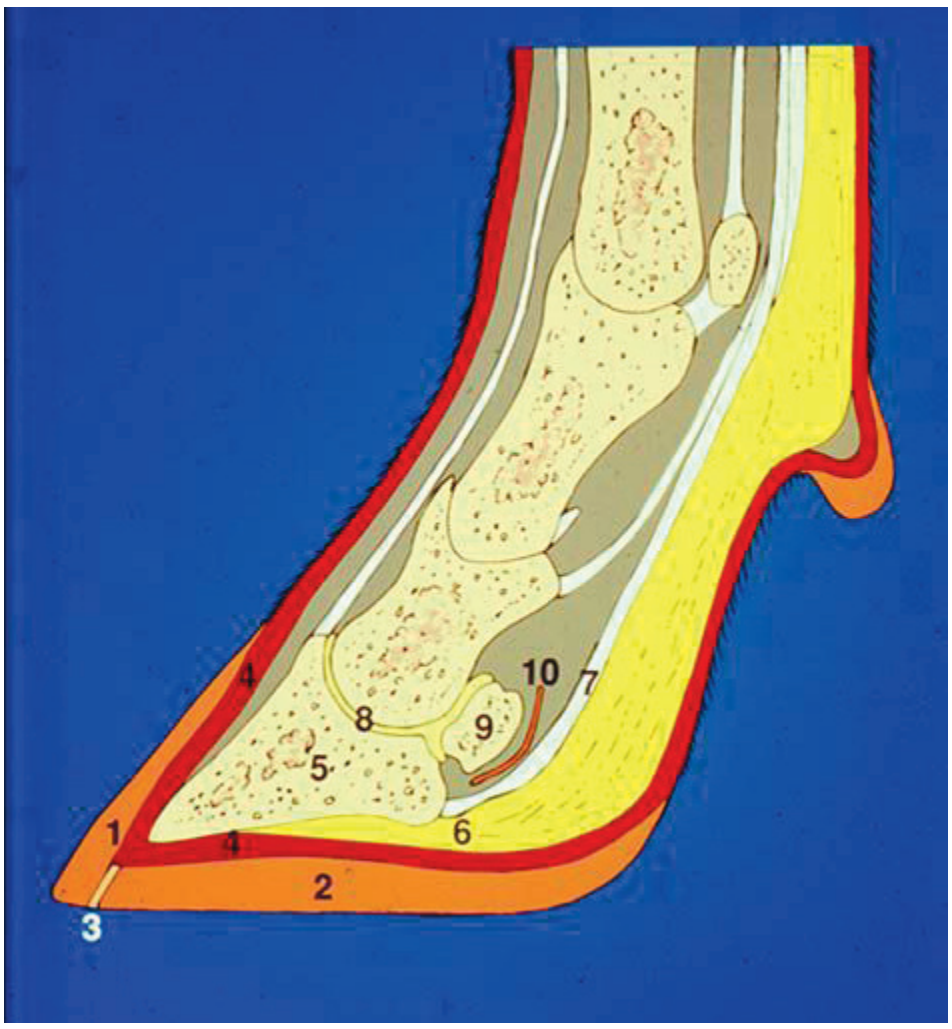
Doug Johnstone reported that seven trimmers in BC are actively using the Hoof Supervisor Computer on farms, to record the various hoof lesions, collecting data for the purpose of further analysis and study, as well as using it to benefit the individual herds in addressing specific problems on farm and tracking progress. These visual reports quickly and accurately identify the quantity, type and location of lesions on each hoof. Good information is needed to understand the problems on farm and industry-wide, before comprehensive plans can be made to address the causes and effectively treat cows.

**"Recent evidence shows lesions related to 'Claw Horn Disruption' (i.e.: Sole Ulcer) are possibly not the result of feeding high energy diets, but rather from events happening around calving."**
**Doug Johnstone**




**Claw Zone Diagram Courtesy of Zinpro Corporation**

At the Pacific Ag. Show the previous day, Dr. Jan Shearer delivered his presentation on Hoof Issues to a packed crowd of producers and other interested industry people. A professor and extension veterinarian from Iowa State University, Dr. Shearer is considered one of the foremost experts in understanding cattle hoof health.




**In this side view, #5 is P3 bone - the bone which rotates down at the front point, causing pressure which can result in penetration through the hoof horn. This situation can arise from laminitis or hormonal changes around calving time.**

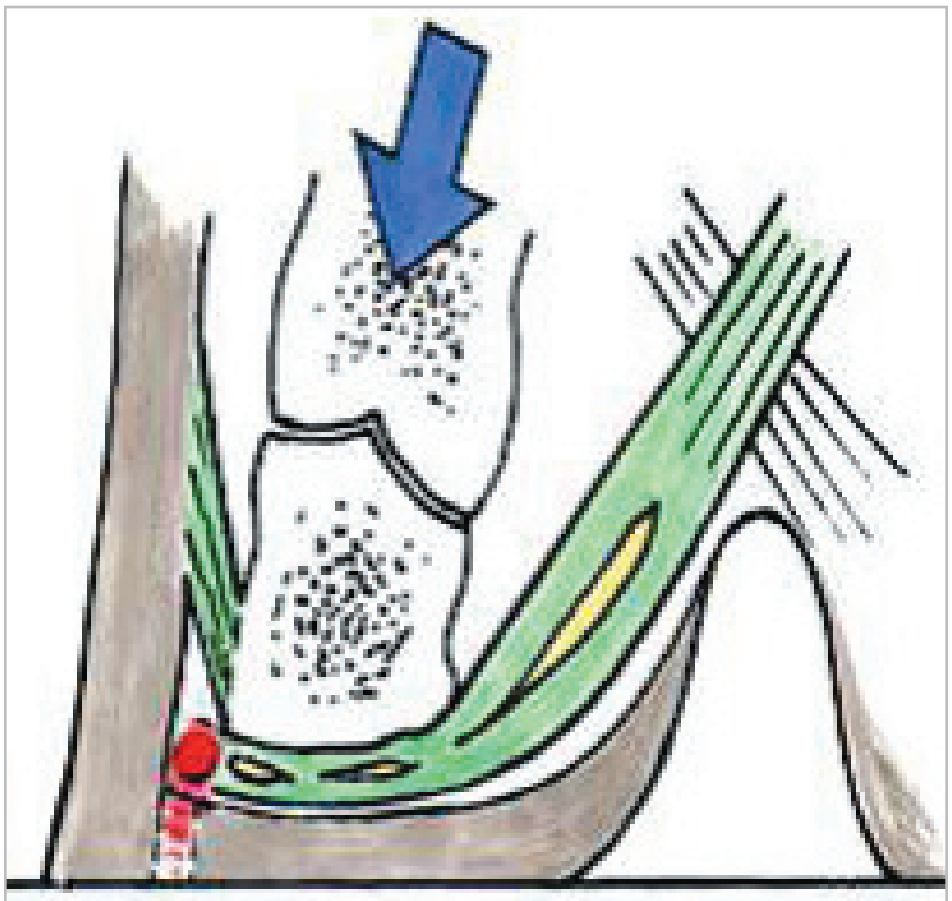


Illustration by Ch.J. Lischer and P. Ossent, 12th International Symposium on Lameness in Ruminants, Florida, 2002

**Suspensory Apparatus: Combination of metabolic factors and walking on hard flooring surfaces causes greater tension on the suspensory mechanisms, causing stretching, elongation, inflammation and hemorrhage. End result: hemorrhage in the sole in the white line.**

Dr. Shearer presented several topics to the Hoof Trimmers including Toe Lesions: Important to Know the Cause; Corrective Trimming and Treatment of Claw Lesions; and Upper Leg Lameness Disorders. Research is pointing to a number of critical variables which contribute to increased risk of hoof disease. The corium is the live tissue inside of the claw capsule which produces the hard hoof material (hoof horn). Anything which damages it will result in impaired hoof function, which is usually visible 6-12 weeks later at trimming time.

Acidosis-induced laminitis can cause sole ulcers which are indistinguishable from ulcers caused by damage resulting at calving time when hormones have caused relaxation of ligaments in the foot. This means that both careful feeding and careful management around calving are especially important.

## Lameness Risk Factors

- Inadequate Laying Time – small stalls with hard surface, poorly placed rails, short lunge space, inadequate bedding, too few stalls, too long waiting for feed or milking, standing more due to heat stress, competition (discourages timid cows). 14 hours/day is ideal!
- Ration/Feeding – incorrect rations or feeding methods can lead to acidosis-induced laminitis, excessive horn growth, sole ulcers.
- Calving Rest – cows need extra laying time when ligaments/tendons in feet are loose due to hormones or enzyme activity associated with calving.
- Inadequate Body Condition – thin cows tend to have a thinner digital fat pad (cushion) which is associated with white line disease and sole ulcers. (Reduced digital cushion is also prevalent and permanent when P3 bone sinks due to laminitis or hormonal effects).
- First Lactation Heifers – greater risk of sole lesions early in lactation, less able to withstand compressive forces in the foot, have less digital fat with less cushioning capacity when compared to second lactation and higher cows.

**Hoof trimmers and the other industry specialists seem to share nearly identical views on what factors on-farm contribute the most to lameness:**

- Stalls: lack of bedding, uncomfortable stall surfaces, stalls that are too short, narrow, with poorly positioned head rail or brisket board
- Floors: coarse, broken, slippery, uneven surfaces
- Overcrowding: insufficient stalls, too long in holding area
- Hygiene – wet, dirty alleyways, stalls and holding areas.

**These factors were also cited to a lesser extent:**

- Poor barn design – too much walking, poor flow patterns, too many corners
- Poor use of footbaths or poorly designed footbaths
- Inadequate ventilation or lighting
- Feeding a ration with excess energy or protein
- Poor identification of lame cows

### Dr. Shearer further discussed Corrective and Functional Hoof-Trimming procedures. Some highlights:

- Avoid aggressive trimming or materials/methods which can cause bleeding of corium, or burn/irritate it. Healthy hoof tissue is only produced by a healthy corium.
- It takes about 60 days to allow the corium to heal and to grow a healthy layer of horn tissue.
- A thick sole layer helps protect the corium and foot structures.
- Wraps can be helpful to control bleeding or to protect exposed corium but must be removed in 2-3 days. If reapplication is needed, be sure to remove again in 2-3 days.
- Using a block on the healthy claw to remove weight from a damaged claw is recommended. Depending upon severity of the lesion, blocks should remain in place for 4-6 weeks if possible.
- Blocks must be placed to provide heel support and be aligned with inner wall of claw for proper stability.

**CFIA Policy states in part: "…animals with severe lameness would endure additional suffering during the transportation process and must not be transported except for veterinary treatment or diagnosis."**

### And Dr. Shearer had a few thoughts on Digital Dermatitis (hairy heel wart etc.):

- DD thrives in a wet, slurry environment. Cleaner, drier environments are helpful in controlling the infectious condition.
- Topical spraying of DD with an effective compound like tetracycline or lincomycin works when the sore is visible on the heel and located higher up.
- DD which is low on the hoof or hiding in the cleft between the claws is extremely difficult to treat effectively with a spray.
- Foot baths can often be part of the problem – they can be dirty and help spread the pathogen, or they may be poorly designed and thus less effective.
- Foot baths should be 10-12 feet long (or more) to force more than one brief step using an effective solution with correct concentration. And of course, they need to be clean and repeated regularly to be part of an effective control program.

Dr. George Dawson from Zinpro Performance Minerals was able to use actual multiple herd data to show that dedicated efforts at the herd level do produce improvement. Recording claw lesion data makes it possible to monitor the outcomes of your hoof health management program. Dr. Dawson showed that first lactation cows generally faced more problems with infectious challenges (DD), whereas older lactation cows had more non-infectious issues. Overall, claw lesion records help producers make more informed management decisions and further improve cow health and performance.

He summed up his informative presentation with an important target – address lameness at the **very earliest stages** (i.e. – get the cows trimmed or helped when they score a 3). Waiting until cows score 4 or 5 (on the 5 point lameness scale), before getting them trimmed can significantly reduce the success rate at the trim chute and lead to a chronic lame cow.

### Early recruitment + good therapies = good cure rate.

Another very important aspect of dairy cattle lameness – transport - was addressed by Dave Zuest of CFIA. He made a compelling case for improvement of lame cattle on farm. Cull cattle can spend days (4-7) in transit to Alberta since there are no longer any major processing plants left in the south coast area. Cattle that are questionable at the start of their journey may have difficulty en route. It is absolutely in the best interest of the cow, the owner, the trucker and end recipient, to ensure that cows are fit enough to make the journey without problems. Ensuring the humane treatment of cattle right through to the end is a shared responsibility.

"Eventually, by connecting the lesion data from Hoof Supervisor with DHI records, we'll be able to see a more complete picture by bringing Days In Milk, Production, Reproduction and other info into the analysis. We need producers to share their data in order for us to learn more and develop solutions." Doug Johnstone

Westgen Sales and Marketing Manager, Paul Meyer gave a presentation on the Heatime Activity Monitoring System. Primarily used to pinpoint cows in heat, it also can identify cows with abnormally low activity. Already, Heatime can list low activity cows which may be experiencing early health problems. It stands to reason that it may also be useful in identifying cows at the earliest stage of lameness, making recruitment more reliable and early intervention/correction more successful.

The Hoof Health Workshop at UBC was organized and facilitated by BC AGRI Dairy Industry Specialist, Tom Droppo, on behalf of the BC Dairy Hoof Health Group. Tom conducted a survey of the attendees and felt that answers to several key questions are worth sharing, since these individuals have deep experience in dairy barns across BC and see thousands of feet up close every week.

On the question of which herd health issues are the costliest on the average dairy, hoof trimmers responded, "Hoof Health came in as the clear front runner in terms of perceived cost to an average dairy herd. Reproduction and Udder health came in a definite second place." Others responded, "Hoof Health was considered costliest, followed closely by Udder Health and Reproduction." Both the trimmers and other industry specialists considered Milk Fever, Ketosis and Johne's Disease as much less costly on the average dairy farm.

The BC Hoof Health Group was founded in 2009 and is comprised of producers, hoof trimmers, veterinarians, BCMPA, university researchers (UBC), AAFC researchers, CAHA (Canadian Animal Health Association), DHI, government extension staff and external expert advisors. Its Mission is to facilitate technology transfer in the areas of research and education, to improve the overall level of hoof health in BC Dairy herds.

With funding from Investment Agriculture Foundation, Westgen Endowment Fund, BC Milk Producers and BC Ministry of Agriculture, the program is planning several further workshops and seminars throughout 2012 to help share knowledge and create forums for exchange of ideas between all interested parties in the dairy industry. Stay tuned for updates and please take advantage of attending these enlightening events! □

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## The BC Dairy Hoof Health Group Is MOOOVING Forward!

Plans are underway for The BC Dairy Facility Design Conference, to be held in November.
Exploring all the ways to improve or build-in **cow comfort** and **herd longevity** into existing or new facilities.
Everyone who has a vested interest in dairy cattle health, comfort and longevity will want to be part of this first-ever Dairy Facility Design event!
Watch for further details throughout the Summer!

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# Hoof Trimmers Have Their Say

By **Tars Cheema**

Hoof trimmers get to see a LOT of hooves in a LOT of different barn environments. I thought it would be interesting to ask their views of what factors contribute to healthy hooves in their best herds. Here's what a handful had to say:

- Using deep sand bedding improves stall comfort, and improves traction on slippery surfaces, but coarse sand with small stones can be problematic in the hooves. Soles are usually thinner too.
- Big, comfortable stalls with room for lunging without hitting brisket boards or neck rails hard encourage cows to lay more.
- Well-managed herds where the herdsman or owner notice problems and take immediate action to correct them, have far fewer lame cows, and have very few severe lame cows.
- Less-intensive herds that feed more forage, graze, and have somewhat lower production, have noticeably fewer feet/leg problems. (Low stress environments seem to result in more longevity)
- Herds that insist on a 'whole-herd' trim schedule a few times per year seem to have far fewer problems, and less severity.
- Stall mats appear to wear away the hair on some hocks, eventually leading to swelling. The worst cases wear through the skin and become infected. Keeping more bedding on the mats seems to help.
- Nutrition still impacts laminitis cases noticeably.
- Older barns may not have the advantage of larger, more comfortable stalls that newer barns have, but keeping well-bedded stalls and less crowding seems to help.
- Newer barns that are brighter, more open and less crowded also have fewer feet problems.
- Good calving and dry cow management (where there is lots of room and enough dry time) contributes to better feet.
- Barns that are kept clean (frequent scraping, clean flushes, no standing/stagnant water) have less digital dermatitis.
- Well-managed foot baths (keep them clean, use the proper ingredient concentration, run them often enough) contribute to a lower level of DD. □