Prevent Lameness By Managing Hoof Health

By Karl Burgi, Dairyland Hoof Care Institute Inc.

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Lameness is costly and a major underlying cause of culling. Because of how we intensely manage dairy cows today, it is essential to implement effective practices that maintain healthy hooves. Though it has multiple causes, you can prevent lameness, minimize losses and save cows with an intense prevention program.

Lameness Prevention Practices

1. Observe cows daily for lameness
2. Detect lameness early with locomotion scoring
3. Hire a competent trimmer who performs functional and therapeutic trimming
4. Assess and trim as needed every cow two times or more per year
5. Immediately provide lame cows with proper treatment and therapeutic trimming
6. Provide a comfortable recovery area
7. Recheck lame cows
8. Keep hoof health records
9. Determine high-maintenance cows and trim them routinely
10. Use a maintenance footbath regularly and correctly
11. Treat digital dermatitis (footwart) lesions by individually spraying with effective solutions
12. Provide a comfortable and clean cow environment
13. Place soft rubber on all downward slopes >1.5 percent

Hoof Health Program Basics

The success of your lameness-prevention program is partially in your trimmer's hands.

- Hire a qualified hoof trimmer who has the knowledge to perform functional and therapeutic trimming. Trimmers should achieve results; lame cows should recover and lameness rates should improve long-term.
- A trimmer should understand the causes of lameness and be able to advise management on ways to improve hoof health.
- A hoof trimmer must commit the time to cover the dairy's hoof-care needs.

Do not underestimate how important correct *and* timely hoof trimming is.

- Studies show cows provided with a proper, maintenance trim before stresses such as calving, ration changes and heat are far less likely to become lame following these periods.
- Functional hoof trimming adjusts claw length, obtains proper claw balance and corrects the toe angle while leaving enough horn to protect the vulnerable corium.
- Functional trimming should be performed on a schedule as a maintenance trim and should rarely result in cows becoming lame shortly after trimming.

Any cows showing signs of lameness need immediate attention.

- Lame cows that are therapeutically trimmed and treated should feel somewhat relieved immediately and recover after only a few days. Using wooden or plastic blocks to aid healing is an important part of therapeutic hoof trimming. If lame cows are not recovering, the means of treatment has failed.
- It is realistic that no cows be culled because of lameness.

Trimming Schedule

One of the major stress periods for springing heifers and cows is three weeks before calving through three weeks postpartum. During this time, cattle experience nutrition, housing and metabolic changes. Studies indicate maintenance trimming should occur six weeks to three weeks before calving to achieve the best possible claw balance and angle during this stressful period.

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High milk production, environment and large udders change the biomechanics of today's dairy cows. This changes the wear and growth of the rear claws. If these changes are more than what the cow can physically handle, lameness will develop.

Perform a second maintenance trim 80 days and 130 days into lactation. Environmental conditions, cow comfort issues and management practices help determine the exact time of the second trim.

Thereafter, additional trims may be required every 120 days to 150 days into lactation to maintain function. This is especially important for cows that will have long lactations.

When the rear claws are imbalanced .5 inch or more, provide a maintenance trim. An imbalance like this makes the cow more prone to lameness when experiencing stress. You can easily view imbalanced rear claws in the milking parlor. When the cow stands on the milking platform, observe whether the lateral (outside) claw exceeds the medial (inside) claw by .5 inch or more at the heel.

Heat stress is one of the major causes of lameness. Cows that have balanced claws with proper hoof angle before summer's heat strikes develop fewer problems. This is another key to prevention you should never overlook. Provide all cows with a hoof health checkup and maintenance hoof trim in May or June.

Lame Cows Need Extra Attention

A moderately to severely lame cow seldom fits into a maintenance-trimming schedule and usually becomes a high-maintenance cow. Often a cow becomes lame is because she was missed during a maintenance trim or some other condition such as posture, disease, environment, and abnormal horn growth or wear made her more susceptible to lameness. This is why you have to be more attentive to the rear claws of cows that were previously lame.

The benefits of trimming these high-maintenance cows every 60 days to 90 days far outweighs the time involved. It is a short task and typically only requires balancing the rear claws. This interrupts the vicious lameness cycle and keeps the claws healthy, resulting in a more productive cow.

Follow-up evaluations are also important. Check cows with severe lesions five weeks after treatment to monitor recovery.

Keep First-lactation Culling Low

Give first-lactation cows special attention, too. Culling rates for first-lactation animals are greater than any other lactation. Mastitis, reproduction problems and lameness are reasons for culling, but lameness is often the initial cause of mastitis and reproduction problems. Anecdotal research indicates you can reverse this trend and achieve a low first-lactation cull rate with the following changes.

1. **Introduce all springing heifers at seven-months pregnant to the dry-cow pen**. This stage of their lives—eight weeks before calving—is the most appropriate time for heifers to learn the social aspects of being around mature cows. They also get used to a routine that is similar to what they will experience during lactation.

2. **Introduce heifers at seven-months pregnant to concrete** (a non-yielding surface). Often, heifers are raised on pasture or dry lots—yielding surfaces. The corium needs eight weeks to six weeks to adjust to the concussion concrete causes. Without this adjustment period, nutritional changes and calving cause stress, which dramatically increase lameness rates.

3. **Trim all springing heifers**. First-lactation cows undergo a major life and physical change. Learning to walk with an udder, being introduced to milking equipment and adjusting to the new environment tremendously stresses these animals. Proper hoof trimming improves weight bearing and weight distribution on the claws, and reduces mechanical insults to the already vulnerable corium. Trimming at this time is also improves claw angle. Steeper foot angle keeps the claws more upright and raises the heels out of the manure, which lowers the incidence of digital dermatitis (footwarts).

Here are the components of a successful hoof health program.

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Guidelines For A Successful Hoof Health Program

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1. Hire a hoof trimmer or a person to perform hoof trimming who can commit the time your dairy needs. This person needs the knowledge and expertise to perform proper, functional and therapeutic hoof trimming and must achieve results.

2. The dairy producer, veterinarian, nutritionist and hoof trimmer must take a team approach to manage hoof health.

3. Prepare springing heifers' feet for their huge transition:
   a. If heifers are raised on a yielding surface (pasture or dry-lots), introduce them to concrete, a non-yielding surface, at 7-months pregnant (8 weeks before calving), but no less than 6 weeks before.
   b. Introduce heifers to the dry cows at 7-months pregnant (8 weeks before calving) to allow them to socially adjust. Waiting longer may adversely affect heifers' hoof health.
   c. Trim all springing heifers 8 weeks to 4 weeks before calving even if the need is not clearly visible.

4. Implement a hoof-maintenance schedule that guarantees the results needed to reduce lameness in your dairy operation. Every cow needs a hoof health checkup and maintenance trim two times per year: 6 weeks to 3 weeks prior to calving and 80 days to 130 days into lactation.

5. **Lame Cows Cannot Wait**! Trim and treat them correctly and immediately. Cows with moderate to severe lameness usually become high-maintenance cows that should be trimmed more frequently, every 60 days to 90 days. Keep records of high-maintenance cows so they can be added to the hoof-trimming list monthly.

6. Manage your cows so their diet is consistent from hour to hour, day to day, 365 days a year.

7. Every cow on your dairy must have a chance to comfortably lie down 11 hours to 14 hours per day. We cannot accept high-producing cows standing around.

8. Prepare your barns to combat heat stress with proper heat-abatement systems.

9. Design and construct dairy facilities that are optimal for high-producing cows. Putting cows first improves longevity resulting in much higher profits.

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