What the Top Herds are Doing for Foot Health

Karl Burgi

SAVE COWS®

Baraboo, Wisconsin
OVERVIEW

• A life cycle and lesion orientated approach
• Hoof lesion records for management decisions
• Prevention through functional hoof trimming
• Cows with a high risk for inflammation and lameness
• Managing digital dermatitis
• Hoof bath to control infectious lesions
• The correct floors for low lameness
Why Cows Get Lame?

Two common claw horn lesions
  • Sole ulcers
  • White line lesions

One infectious hoof lesion
  • Digital dermatitis (hairy warts)

=> 95% of all lameness
A Life Cycle Approach

No matter what the causation of lameness, once the cow develops a lesion, they are at much greater risk for developing the same lesion again in the next lactation.

Oikonomou et al., 2013
A Life Cycle Approach

This is due to permanent anatomical changes to the structure and function of the claw – including skin integrity, the fat pad, the suspensory apparatus and the pedal bone itself.

We can only succeed if we prevent!
Damage that Will Make Lameness Reoccur
The 24 Hour Rule

Lameness treated within 24hrs!

• Delay of lameness treatment;
  • More damage
  • Longer recovery
  • Chronic lameness
  • Higher herd lameness

High lameness = more replacements needed!
How to Determine Lameness Status at Your Dairy?

1. Locomotion scoring

2. Hoof lesion recording

3. Dairy management software

4. Hoof health analysis
EGRAPH LAME:10 FOR\D369E4P

Date of event
Oct17  Nov17  Dec17  Jan18  Feb18  Mar18  Apr18  May18  Jun18  Jul18  Aug18  Sep18

Count of events
0  50  100  150  200  250  300  350

Categories:
- ThinSoleOv
- SoleFractu
- Trim Only
- Dig Derm
- Sole Ulcer
- WhiteLineA
- Foot Rot
- ToeUlcerAb
- CorkScrew

SAVE COWS™
Distribution of Top 5 Lesions Across DIM Range$^a$:
Lame & Trim Events

- Digital Dermatitis
- Foot Rot
- None
- Sole Ulcer
- Toe Ulcer
- White Line Disease

$^a$ Lesions differ across DIM range, $P < 0.01$
Is Hoof Trimming the Problem?

Effective hoof bath

Cow comfort 12h

Secure floors

Heat abatement

Cow handling

Time out of pen < 2.5h/d
Lameness and Hoof Trimming

If your farm has a lameness problem, you more than likely have a hoof trimming problem.
Timed Trimming Schedule

- Every dry cow and springing heifer is assessed and functionally trimmed 8 to 3 weeks prior to calving
- Perform one or two more lactation assessments and trims depending on:
  - Housing, environment, management and age of cow
  - High maintenance cows
- SOP for chronic lame cows - check rear feet 3 to 6 times extra per year
  - Flag in management software!
Programmed Hoof Trimming Schedule

- **Closeup Cow**: Day 0
- **Fresh Cow**: +35 days
- **Early Lactation**: +55 days
- **Late Lactation**: +80 days
- **Middle Lactation**: 21 days
- **Far Off Dry Cow**: +300 days
- **Dry Off**: Older Heifer, -60 days
- **Optimal Trim Period 1**: Optimal Trim
- **Optimal Trim Period 2**: Do Not Trim

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Cows with a High Risk for Inflammation
Too Hot to Lie Down!

39°C or 102°F cows stand up --- 37.8°C or 100°F cows lie down

Body temperature increases 0.5°C (.75°F) per hour when heat stressed cows lie down and decreases by 0.26°C per hour when they stand.

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Too Hot to Lie Down!

- A 60 lbs cow = 2500 BTU
- A 100 lbs cow = 6000 BTU

= 5 hair dryers

100 cows producing 100 lbs cows make the same as 500 hair dryers.
Why Inflammation

Healthy corium and lamina

Inflamed corium and lamina

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Inflammation is the Prelude for Lameness

Inflammation risks:

• Calving period
• Trauma from abnormal forces to the claws (lack of hoof trimming)
• Prolonged standing (over-crowding, heat stress, away from pen)
• Incorrect hoof trimming (over-trimming, poor therapeutic trimming)
• Delayed lameness treatment (DD, claw horn lesions, foot rot)
• Improper or no blocking of claw horn lesions

Anti-inflammatory for better lameness recoveries?
First Lactation Heifers Spent More Time Standing in The Week Before Calving

Proudfoot et al. 2006; in prep
Lameness by DIM from E-graph DC 305
Calving = Highest Risk for Inflammation

- Inspect dry cows heifer when moving to close up pen
- If there are issues that is the last day for any intervention
- Lameness in close up and fresh cow pen = **High percentage will not finish the lactation!!**
- This is the most crucial time to pay attention
Digital Dermatitis
Typical Sign of Digital Dermatitis
Breeding Age Heifers and DD
Early Identification and Prompt Prescription Treatment Can Stop This Disease!

Tet 324 powder
Vinegar activated
Less is successful and safe!
2 grams!

6cc of Oxytetracyline 100ml

3 two second applications with tetracycline aerosol

Remove wrap after 24 hrs !!!
Progression of disease. Bacteria have begun to migrate deeper into the epidermis and encyst! **Organized**

**M2** with proliferation
This is a Permanent Lesion

Lesion present for life

- Treponemes migrate deep into the epidermis = are encysted
- Hyperkeratosis present
- Encysted bacteria have formed clusters, colonized, organized and they start spreading if they emerge again
- New infections must be prevented with regular footbaths and good hygiene
Important Digital Dermatitis Control Factors

1. Observe heifers starting at 10 months of age
2. Treat first lesions with topical Tet 324 + wrap promptly
3. Use a hoof bath in heifer for prevention if necessary
4. Any formalin solution > 2% will create future problems
5. Feed Availa®Plus starting at 10 months of age
6. Observe dry and milk cows for early lesion and treat promptly
7. Use an effective hoof bath for the prevention
8. Practice excellent hygiene

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Heifer DD Program with Availa®Plus and Early Antibiotic Treatment

Implemented February 2014
Chronological Comparison of DD by Year and Stage

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The Role of the Hoof Bath

Improve hygiene condition of hooves

Disinfect hooves for prevention and control of hygiene influenced hoof diseases

1. Prevent foot rot infections
2. Control and treat early DD (M1) infections
3. Control chronic DD (M4) from re-infecting
Effective Hoof Bath Dimensions

- Solution depth: 3 ½ - 4 inches (10cm)
- Bath width: 20 inches (50cm)
- Bath length: 12 feet (4m)
- Curb height: 12 inch (25cm)
- Side panel height: 6 foot (1.80m)
- Side panel width: 20 inches (50cm)
- Side panel length: 36 inch (75cm)
Effective Hoof Bath

Controlling Organic matter contamination extends life of disinfectant
Common Hoof Bath Solutions - Cleaning

Mild soap/bleach:
1 quart soap / 4 quarts bleach / 50 gal water

Mild soap/bleach/salt:
1 quart soap / 4 quarts bleach / 5 lbs salt / 50 gal water

Sodium Hypochlorite (NaClO):
2 1/2 gallon NaClO / 50 gal water

Use mild detergents like dish or laundry soap!
Common Hoof Bath Solutions - Disinfecting

Copper Sulfate 2.5%
12 lbs (5kg) CU + Sodium Bisulfate (NaHSO$_4$) 6oz (100g)/50gal water (0.5g/l)
- monitor pH regularly, 3.0 – 5.0
- Use hot water for initial mix of CU and NaHSO$_4$

Hoof Zink (Follow manufactures recommendation)

Formalin*1.5 - 2% 2-3 quarts/50gal water
*use formalin only with automation, away from where people are working! (carcinogen)

Integrate other commercial products only if effective!
Why are Floors Causing Lameness
Why are Floors Causing Lameness

The only surface that works!

V grooves are not effective long term. Very high risk for white line lesions

Smooth surface with perfect grooves reduce wear and lameness
Correct Grooving – Best Traction

One or two claws resting on groove = no slipping

http://trakriteglobal.com/
Information on concrete floors:
Correct groove dimensions

- 1.2 cm (1/2 inch) deep groove
- 1.9 cm (3/4 inch) wide with 90 degree corners
- 8.3 cm (3 ¼ inches) from center to center of groove
Mini-Grooving for Old Concrete

http://trakriteglobal.com/

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Two New Barns With Low Lameness
Essential Rubber Installations

Parlor decks

Rotary parlor exits
90 degree turns

Long walking distances!
Action Plan at Top Farms

1. Prevent – Prevent – Prevent
2. Timed functional hoof trimming
3. Daily identification of lame cows *(who is in charge?)*
4. Lame cow treatment policy = **24 hours** *(who will do it?)*
5. Regular locomotion scoring of cows
6. Manage trimming schedules with dairy management software
7. Analyze records to make management decisions
It Can be Done!

10,000 cow dairy with
< 250 lame cows for the year 2006

No Lameness Tolerance Policy
It Can be Done!

Expanding from 400 cows to 800 cows and less than 5% lameness
It Can be Done!
Expanding from 3,500 cows to 6,000 cows and less than 5% lameness

No Lameness Tolerance Policy

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The Success is in the Details

Animal welfare is everyone's bottom line!

Thank You!

www.SaveCows.com