

Update on Heel Warts

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Take home points

- **Heel warts: erosion between the heel bulbs**
- **Caused by bacteria**
- **Control focuses on cow environment and footbaths**
- **Foot trimming is important to identify and treat the disease**
- **Research is underway at the University of Saskatchewan into heel wart control**

Identification

- Aka.: Digital dermatitis, hairy heel warts, hairy hoof warts, strawberry footrot, Mortellaro's disease, Italian footrot etc.
- Skin disease causing erosions between the heel bulbs
- Extremely painful
- Caused by bacterial of the *Treponema* group



Small dime size moist area in interdigital cleft



Strawberry granuloma larger than a dime



Verrucose tentacles growing out of granuloma

From: Dr. N Cook.
University of Wisconsin

Alberta Dairy Hoof Health Project

	Alberta	British Columbia	Ontario
Digital Dermatitis	43.2%	37.9%	34.8%
Sole Ulcer	17.2%	14.9%	13.1%
White Line Lesion	15.5%	14.3%	8.6%
Sole Hemorrhage	6.4%	7.1%	22.4%
Toe Ulcer	4.9%	5.3%	1.7%
Interdigital Hyperplasia	3.7%	3.1%	7.5%
Thin Sole	2.4%	2.1%	1.0%
Foot Rot	2.4%	1.8%	1.0%
Heel Erosion	0.6%	0.6%	2.2%
Corkscrew Claw	1.3%	0.3%	1.2%

Control measures

- **Control always beats treatment**
- **Cow environment and footbaths crucial**
- **Stalls crucial:**
 - **Lying: 12h**
 - Eating: 4.4h
 - Drinking: 0.4h
 - Standing in alley: 2.9h
 - Standing in stall: 2.4h
- **Alleyways:**
 - Clean environment for feet
 - Alley scrapers may wash the feet with manure



Footbaths

- **Purposes:**
 - Clean foot
 - Disinfect space between digits
 - Prevention, not treatment
- **Several compounds used:**
 - Copper sulphate
 - Formalin
 - Zinc compounds
 - Other disinfectants
 - Plain soap
- **Cows must be able to bypass an empty footbath**

Hoof & leg hygiene scoring chart (score at least 20% of cows in each pen)

Score 1 – Legs and feet are clean; little or no manure contamination of lower limbs.

Score 2 – Legs and feet are slightly dirty; lower limbs are lightly splashed with manure.

Score 3 – Legs and feet are moderately dirty; there are distinct plaques of manure on the foot, progressing up the leg.

Score 4 – Legs and feet are very dirty; there are confluent plaques of caked-on manure on the foot and higher up the lower leg.

Scoring interpretation:

proportion of cows scoring 3 and 4	comment	suggested foot bath frequency
less than 25%	good	as required
25 to 50%	fair	2 days per week
51 to 75%	poor	5 days per week
over 75%	very poor	7 days per week

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Footbath design

- **Avoid water only wash baths immediately before chemical**
- **Use compounds labeled for control of heel warts**
- **Treatment bath:**
 - At least 5 inches solution
 - Ideally 10 feet
 - As wide as alley
- **Antibiotics in foot baths should only be used under the supervision of a veterinarian**
- **Use of antibiotics is off label**

Treating cases

- **Foot trimming**
- **Treatments attempted:**
 - Antibiotics
 - Non-antibiotic options
 - Wraps
 - Pastes
 - Sprays
 - Etc.
- **Good foot trimmer crucial in any dairy operation**
- **Prompt identification and treatment**

Treatments

- Many antibiotics used
- Oxytetracycline:
 - Most common
 - Generally effective
- Wraps, pastes, sprays all attempted
- This is off-label antibiotic use
- No milk or meat withhold has been established
- Test milk before addition to bulk tank
- Non-antibiotic options:
 - Limited data
 - Most need to be formally tested

Research at WCVM

- Survey of digital dermatitis
- Funding applied for through SaskMilk and SK ADOPT program
- Farm visits, extension talks for control
- Contact any of the investigators if you are interested in participating
- Potential for a vaccine?
- Cows seem to be at reduced risk when older – immune response?
- Strategy:
 - Identify parts of bacteria that stimulate immune response
 - Generate these regions in the lab
 - Formulate and test experimental vaccine
- Issues with gaining funding

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