Beef Cattle Lameness

Awareness of beef cattle lameness issues
  • The “why”
  • The “how”

Predominant lameness issues
  • The “knowledge”
  • Identify, treatment, prevention
  • Questions and Solutions
Beef Industry Issues

Healthy Cattle

Healthy People

Healthy Planet

Improving Health And Well-being
Of Animals Sold Out Of
Cow/Calf Operations

- The “Why”
- Optimize economic return

Mortality Due To Lameness Or Injury

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Under 3 wks of Age</th>
<th>&gt; 3 wks of Age</th>
<th>Breeding Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 3 wks of age</td>
<td>3.4</td>
<td></td>
<td></td>
</tr>
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<td>&gt; 3 wks of age</td>
<td>4.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breeding Stock</td>
<td></td>
<td>8.4</td>
<td></td>
</tr>
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</table>

NAHMS USDA APHIS. 2007-08. Beef Part V.
Lameness Affects Productivity And Value

- Cows and bulls
  - Reproduction
  - Longevity in the herd
  - Value as culls

Market Cows And Bulls

What Percent Of Gross Income Are Cull Cows To The Beef Operation?

- From 1994 to 1999....
- The average total gross sales were $408 per cow
- Sales from breeding / cull cattle was $85
- 21% of gross income to a cow/calf producer
Where Are Cull Cows And Bulls Going?

- Perception is cull animals used for ground beef
- 2007 Market Cow and Bull Beef Quality Audit
  - Ribeye, tenderloin, inside round, strip loin, and top sirloin butt
  - 54.1 vs. 84.7 % (1999 vs. 2007)

2007 Market Cow and Bull Quality Audit

- We are making progress
- Improvements from 1999 to 2007
  - Herd management techniques
  - Animal handling
  - Hide damage
  - Injection site locations
  - Bruises
  - Bird shot

Shift In Thought Process

- Physical quality of the beef products
- Today
  - Wholesomeness of food
  - Ethical raising of animals for food production
Lameness Affects Production

- Cows and bulls
  - Reproduction
  - Longevity in the herd
  - Value as culls
- Calves
  - Weaning weight
  - Can their feet hold up as they progress through the system?

Time Of Onset, Location, And Duration Of Lameness In Beef Cattle In A Commercial Feedyard

T.M. Green, D.U. Thomson PhD DVM, S. Guillossou DVM MS, B.W. Wileman DVM, P.T. Guichon DVM

Background

- 13.1% of feedlot cattle treated for health problems
  - 16% of which due to lameness
- Approximately 5.2 million cattle being fed in Nebraska, lameness accounted for $18 million
Lameness Pre- And Post-Processing In Feeder Cattle

- PreProcessing: 1.6
- PostProcessing: 2.5

P = 0.02

Lameness Over Time In Feeder Cattle

- wk0: 50
- wk1: 45
- wk2: 15
- wk3: 10

Number lame

Average Daily Gain Of Lame Vs. Non- Lame Feeder Cattle

- Lame: 3.41
- Sound: 3.60
Summary

- Lameness on arrival
- Processing appeared to play major role in cause of lameness
- Lameness appeared to be transient/self-limiting

Improving Health And Well-being Of Animals Sold Out Of Cow/Calf Operations

- The “Why”
  - Optimize economic return
  - Industry representation of animal welfare

*Lameness Can Instantly Give Us A “Black Eye”*

Packing Plant Audits

- 16% of cows were lame on arrival
- 31% of beef bulls were lame on arrival
- We don’t send half dead cows or bulls to slaughter anymore
  - BSE and downed animals
  - Freight charges
Animal Rights And Media

- Started from use of animals in research and now includes raising of food animals
  - Playing on the human-animal bond
- Lack of consumer attachment
- We are now tweeting!
  - Creating paranoia not prudence
- We live in a 1st world country

Improving Health And Well-being Of Animals Sold Out Of Cow/Calf Operations

- The “Why”
  - Optimize economic return
  - Industry representation of animal welfare
- The “How”
  - Good management practices

“75% Of The Downer Cows Can Be Prevented Through Good Management”
**Good Management Practices: Focus On Prevention Of Lameness**

- Facilities
- Cattle handling
- Loading and transporting
- Recognize “at risk” cattle
- Be ahead of seasonal lameness conditions

**Lameness Treatment Protocols For Your Operation**

- Treatment approach
- Expected deadline for resolution
- Consult veterinarian if animal has not recovered or experienced a wound to the foot

**Improving Health And Well-being Of Animals Sold Out Of Cow/Calf Operations**

- The “Why”
  - Optimize economic return
  - Industry representation of animal welfare
- The “How”
  - Good management practices
  - Nutrition
**Nutrition To Meet Production Demands**

- Maintenance
- Growth: replacement heifers and calves
- Reproduction
- Lactation
- Herd health
  - Immunity: vaccination response
  - Lameness prevention

**Adequate Intake Of Balanced Nutrients**

- Protein
- Energy

**Body Condition Score**

- We continue to stress marketing cattle prior to significant weight loss
- Manage for value when go to market
Adequate Intake Of Balanced Nutrients

- Protein
- Energy
- Vitamins
- Minerals
  - Both macro and trace minerals

Manganese For Skeletal Soundness

- Critical for fetal development
- Maintaining soundness in growing and mature cattle

Zinc Important For Building Claw Integrity

- Zinc
  - Cell replication to support maintenance and repair
  - Keratin synthesis for horn tissue
  - Skin as first line of defense against foot rot
  - Immune function
Zinc For Repair

- Immune response for fighting the infectious agent
- Wound healing

Effect Of Trace Mineral Programs* On Performance And Foot Problems

<table>
<thead>
<tr>
<th>ADG, lb</th>
<th>% Foot Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>ZINPRO</td>
</tr>
<tr>
<td>2.71†</td>
<td>2.79‡</td>
</tr>
<tr>
<td>2.45$</td>
<td>5.38*</td>
</tr>
</tbody>
</table>

* ZINPRO are supplied
† Within a category, means lacking a common superscript letter differ, P < 0.06
$ Kempson, 10th International Lameness Symposium, 1998

Copper

- Required for tissue function of the laminae
- Connection to attach the bone to the claw horn tissue
Vitamin E And Selenium

- Work synergistically to protect tissue undergoing change
- Chronic selenium toxicity can cause lameness issues

Nutrition Assessment

- Body condition score
  - Reproduction performance
- Calves at weaning
- Post-weaning performance
- Herd health
  - Vaccination program
- Lameness

Take Home Message

- Lameness issues are a reality for all segments
- We can manage and make decisions to minimize the impact

“Looking out for the animal’s best interest from physical, emotional, environmental and nutritional aspects are what we do daily”
Improving Health And Well-being Of Animals Sold Out Of Cow/Calf Operations

- The “Why”
  - Optimize economic return
  - Industry representation of animal welfare
- The “How”
  - Good management practices
  - Nutrition
  - Knowledge

Predominant Lameness Issues

Dee Griffin, DVM
Great Plains Vet. Ed. Center

Direct Costs Of Lameness In The Feedyard

<table>
<thead>
<tr>
<th>Items</th>
<th>Cost/head treated</th>
</tr>
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<tbody>
<tr>
<td>Loss to overhead</td>
<td>$58.50</td>
</tr>
<tr>
<td>Loss from chronics</td>
<td>$43.13</td>
</tr>
<tr>
<td>Treatment cost</td>
<td>$25.00</td>
</tr>
<tr>
<td><strong>Total Footrot Cost</strong></td>
<td><strong>$126.63</strong></td>
</tr>
</tbody>
</table>

$1,150/cwt of feeders, $300.00 ration cost and $105.00 finished cattle incorporated into model from Dr. Dee Griffin, MPVM, University of Nebraska
Packing Plant Audits

- 16% of cows were lame on arrival
- 31% of beef bulls were lame on arrival
- We don’t send half dead cows or bulls to slaughter anymore
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Other Footrot And Lameness Considerations

- Cattle diagnosed with footrot at any point
  - ADG decreased 0.07 lb
  - Required 5 more days on feed
- Cattle diagnosed with footrot between days 120 and 225
  - ADG decreased 0.11 lb
  - Required 14.3 more days on feed
- Cattle lameness considered an animal welfare index in some branded programs


Anatomy Of The Foot

CLAW BONES AND TENDONS

- Coronary Band
- Wall
- Bulb
Identifying Lameness Problems

- Watch animal in motion to help pinpoint location of lameness
- Have to pick up the foot, wash it and examine to determine cause of lameness

90% Of Lameness Is Due To Problems In The Foot

- Two most common problems require different treatment
  - Footrot
  - Toe abscesses
Footrot

INFECTION OF SKIN BETWEEN THE TOES

- Symmetrical swelling
- Foul smell
- Broken skin (ulcers) between toes

Footrot

DIAGNOSIS

- Bacteria causing disease lives in soil or internally in animal
Footrot
TREATMENT

- Wash until clean
- Topical antiseptic
- Responds well to antibiotics approved for footrot
  - Consult veterinarian on which antibiotic to use

Toe Abscess
TOE ABRASSION WITH SUBSEQUENT INFECTION IN THE CLAW

Toe Abscess
DIAGNOSIS

- Walk to protect toe(s)
- Extremely painful
- Worn sole and tip of toe
- No swelling; normal skin
**Toe Abscess**

**TREATMENT**

- Tip toe to drain abscess and relieve pressure
- *Do not trim enough to cause bleeding*

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**Toe Abscess**

**TREATMENT**

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**Toe Abscess**

**TREATMENT**

- Tip toe to drain abscess and relieve pressure
- *Do not trim enough to cause bleeding*
- Select long duration antibiotics
- House in clean/dry environment
- May require extended therapy
**Toe Abscess**

**PREVENTION**

- Quiet/calm cattle handling
- Provide nonabrasive footing in alleys and working areas

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**Swollen Septic Joint**

**INFECTION IN THE JOINT**

- Swelling at coronary band or over other joint areas
- Primary cause is injury
**Swollen Septic Joint**

**DIAGNOSIS**

- NO EFFECTIVE TREATMENT
- Management
  - Comfortable pen/bedding
  - Humane care
    - Ship if past withdrawal date
    - Euthanize if shipping is not available

**Swollen Septic Joint**

**PREVENTION**

- Quiet calm cattle handling
- Inspect and maintain facilities to minimize injury
- Septic joints secondary to systemic infection are difficult to prevent

**Hairy Heel Warts (Digital Dermatitis)**

HIGHLY INFECTIOUS DISEASE CAUSING RAW AREA TO DEVELOP AROUND THE HEELS
**Hairy Heel Warts**

**DIAGNOSIS**
- Reluctance to walk
- Raw, bright red heel lesion
- Lesions may have hair-like growths
- Primarily found in dairy beef

**Laminitis**

**DIGESTIVE UPSET THAT BREAKS DOWN FOOT**
- Walk softly with very short steps
- Affects both sides
- Tend to stand with feet forward
Laminitis And The Suspension System

- Laminitis disrupts attachment of the P3 bone to the wall
- P3 bone is free to rotate, sink
- Pressure through the sole = ulcers

Laminitis

- Generally No Effective Treatment
- Consistent Bunk Management
- Adequate Step-up Rations
Sandcracks
VERTICAL CRACKS

- Extend from the coronary band to the center of the claw wall
- Associated with a hardship groove that acts as a fault line from which the claw ruptures vertically

Sandcracks
VERTICAL CRACKS

- Presence of the hardship groove that separates a period of excellent horn production from a period of poor nutrition

Responsible Care For Downed Cattle
Veterinarian designed treatment management protocol

Protocols MUST avoid FDA unapproved product use

- Cu naphthenate and phenylbutazone ….. not approved for use on food animals
- Salvaged lame animals are residue testing targets … flunixin & phenylbutazone

Immediate veterinarian examination critical for:
- Animals that do not respond to therapy
- Explosive outbreak of lameness

Summary Thoughts

- Alert downer verses moribund
- Humane euthanasia
  - It is better to be a week early than a day late: euthanasia decision making
- Animal husbandry
  - Shelter, hay and water
  - 24 to 36 hours to show improvement
  - Roll every 6 to 12 hours to prevent compartmentalization

Prognosis

- Unacceptable transportation methods
  - Dragging
  - Lifting with chains
- Acceptable transportation methods
  - Sled
  - Low-boy trailer
  - Bucket of a loader

Moving Downer Cattle
Euthanasia
Anatomical Landmarks

Correct Position

Novel Training Partnerships

www.animalcaretraining.org

Animal Care Training

Please select your area of training

English/Spanish

English/Spanish

English/Spanish

English/Spanish

English/Spanish

English

Animal Care Training | Tucker Hall 112 | Waterloo, IA 50703 | 765-383-8951
We Need One Set Of Assessment Standards

Questions