Is Your Cow Comfort & Animal Care Farm Audit Ready?

Nigel B. Cook MRCVS
School of Veterinary Medicine
University of Wisconsin-Madison
Defining Animal Welfare
(Fraser et al., 1997)

1. Is the animal functioning well
2. Is the animal feeling well
3. Is the animal able to live a reasonably natural life
• Affective State – she’s in pain!
• Natural Living – lameness causes reduced mobility, changes in feeding and resting behavior
• Biological Function – she’s giving less milk and less likely to conceive
Rampant Animal Cruelty at California Slaughter Plant

Undercover investigation finds abuses at major beef supplier to America’s school lunch program

The Humane Society of the United States

Video evidence compiled by The Humane Society of the United States shows inhumane handling methods that may have endangered the health of children.

Locking undercover investigation by The Humane Society of the United States reveals widespread mistreatment of “downed” dairy cows—those who are too sick or injured to walk—Southern California slaughter plant.

Current Climate
Well funded organizations controlling the message in social media and in the press … HSUS, PETA, MFA …
• Humane treatment of cows
• Space to roam – pasture based production
• Fed grass with no unnatural use of steroids, antibiotics or hormones
• Profitable, productive and efficient….and organic
• Eco-friendly and sustainable
Brand Name Protection …
In the US, less than 2% of the people produce all the food for the rest of the 98% and only 14% of the people live in rural communities.
Perception we are managing cattle in an ‘unnatural’ state
Farm Assurance Programs - Europe

• Assure the consumer that the food is safe and that the animals are well cared for
Audits!
Global Trends in Auditing

- Less prescriptive
- Focus more on the outcome and less on the process
- Easier to assess, focused on main risk groups
- More benchmarking and comparison – emphasis on continuous improvement
Dairy FARM 3.0

- The new one is shorter, more targeted, and easier to implement .... It's also more difficult to comply with each standard!
Progressive Evolution of Dairy FARM

Version 1.0 (2009 – 2012)
- Voluntary Participation

Version 2.0 (2013 – 2016)
- Mandatory Participation
- Voluntary Action Plans
- Tail-Docking Phase-Out 2022

Version 3.0 (2017 – 2020)
- Greater accountability
- Training, VCPR, Cow Care Agreement
- Mandatory Corrective Action Plans
- Tail Docking Phase-Out 2017
- Critical Control Points
- Probation/Suspension
Significant Changes to Dairy FARM 3.0

• Phase One Priorities
  • V CPR form signed by DVM
  • No Tail Docking 2017 vs 2022
  • Dairy Cattle Care Ethics and Training Agreement
    • Annually signed by all employees

• Phase Two Priorities
  • Herd Health Plans
    • Written protocols
  • Animal Observations
    • Lameness
    • Hock and Knee Injuries
    • Body Condition
Significant Changes to Dairy FARM 3.0

• Phase One Priorities
  • VCPR form signed by DVM
  • No Tail Docking 2017 vs 2022
    • Dairy Cattle Care Ethics and Training Agreement
      • Annually signed by all employees

• Phase Two Priorities
  • Herd Health Plans
    • Written protocols
  • Animal Observations
    • Lameness
    • Hock and Knee Injuries
    • Body Condition
You need to do more than sign a form ....

It’s a change in culture on the farm!
Handling of Downer Cows
Effect of Positioning Relative to Flight and Pressure Zone

Flight Zone:
Cow turns and takes flight

Pressure Zone:
Cow takes notice of handler and responds without taking flight

Blind spot in flight zone: AVOID!

Area where cow has full depth perception: does not have to turn to look at handler
Effect of Positioning Relative to the Point of Balance

Handler positioned here in pressure zone will instigate forward movement of cow

Point of Balance

Handler positioned here in pressure zone will instigate backward movement of cow
Zig-zagging when moving cattle to the milking center

Handler moves from side to side applying gentle pressure to the outlying cows behind the point of balance in their pressure zone.
Handling around the parlor and holding area is a MAJOR concern.
Low stress handling in the parlor
The Bud Box Concept

The handler stands where the green x is in the diagram above
Longer resting times in wider stalls (Tucker et al., 2004; Solano et al., 2016) and more lameness in stalls that are too narrow for the size of the cows using them (Westin et al., 2016)
iTunes and Android apps – Freestall assessor
MWPS-7 8th edition
Dairy FARM manual
Cows get up in loops that are located too low and injure their backs.
Cows hit lunge obstructions and low neck rails and injure their backs.
Cows get stuck in the worst possible places when the stall is poorly designed and they are lame!
These injuries will be audited!
…. and yet manufacturers keep trying to be clever with new designs!
It shouldn’t surprise you when you provide a side lunge loop when the cows lie to the side …
Medial Hock Lesions
The green stall ... The color of the bedding after the cow uses them?
We know how to build comfortable stalls!!
Significant Changes to Dairy FARM 3.0

• Phase One Priorities
  • VCPFR form signed by DVM
  • No Tail Docking 2017 vs 2022
  • Dairy Cattle Care Ethics and Training Agreement
    • Annually signed by all employees

• Phase Two Priorities
  • Herd Health Plans
    • Written protocols
  • Animal Observations
    • Lameness
    • Hock and Knee Injuries
    • Body Condition
## Lameness and Injury Outcome Assessments

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Score Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Locomotion Score</strong></td>
<td>Walks without obvious gait asymmetry or weight transfer between limbs and cannot discern which leg is lame after a few strides. Steps may be slightly uneven and may have a flat or subtle arch to the back.</td>
</tr>
<tr>
<td>1</td>
<td>Asymmetric gait with obvious weight transfer and shortening of the stride of the affected limb altering cadence of movement. May also show a head bob, back arch and joint stiffness leading to abduction of the limb.</td>
</tr>
<tr>
<td>2</td>
<td>Able to walk only with extreme difficulty, almost unable to bear weight on the affected limb. Pronounced back arch with rear limb lameness. These animals are frequently in poor body condition and in obvious pain.</td>
</tr>
<tr>
<td>3</td>
<td>No obvious hair loss (≤2.5 cm in diameter), swelling or abrasion</td>
</tr>
<tr>
<td>2</td>
<td>Hair loss &gt;2.5 cm in diameter on lateral or medial aspect, or over the tip of the calcaneus, without obvious swelling (&gt;2.5 cm) or abrasion</td>
</tr>
<tr>
<td>3</td>
<td>Abrasion or ulceration and/or obvious swelling &gt;2.5 cm of the joint</td>
</tr>
<tr>
<td>4</td>
<td>Abrasion or ulceration and/or obvious swelling &gt;2.5 cm of the joint</td>
</tr>
</tbody>
</table>

From Cook, 2017
Lameness – a global problem!

Worldwide average ~ 23%

Amory et al., 2006; Barker et al., 2010; Chapinal et al., 2014; Cook, 2003; Dippel et al., 2009; Fabian et al., 2014; Kielland et al., 2009; Popescu et al., 2014; Sarjokari et al., 2013; von Keyserlingk et al., 2012; Westin et al., 2016; King et al., 2016
Locomotion Score

The FARM Program goal for Locomotion Score is that 95% or more of the lactating and dry herd score a 2 or less on the FARM Locomotion Score Scale.

Locomotion scoring is recommended to improve lameness detection and to regularly assess the distribution of cows at each score level. The FARM Program also encourages a written lameness prevention protocol to be in place.

**Locomotion Score 1 = Sound**
Animal has normal posture and a normal gait.

**Locomotion Score 2 = Moderate Lameness**
Stands well but is noted to favor a limb when walking.

**Locomotion Score 3 = Severe Lameness**
Severe lameness is defined as an animal either unable to move, or able to move, but barely able to bear weight on the affected limb. Signs may also include back arch, poor body condition, head bob and an inability to flex the lower leg joints. This cow is sore on her left rear leg, favoring it both standing and walking.

The severely lame cow is a failure of both our prevention and our treatment programs!
Factors reducing lameness risk
Literature 2006-2016

• Less time standing on concrete (Bell et al., 2009)
• Deep bedded comfortable stalls rather than mats or mattresses (Chapinal et al., 2013; Cook, 2003; Dippel et al., 2009; Espejo et al., 2006; Rouha-Mulleder, et al., 2009; Solano et al., 2015),
• Less restrictive neck rail locations, low rear curb heights, and absence of lunge obstructions (eg. Chapinal et al., 2013; Dippel et al., 2009; Rouha-Mulleder, et al., 2009; Westin et al., 2016),
• Wider stalls (Westin et al., 2016)
• Use of manure removal systems other than automatic scrapers (Barker at al., 2010),
• Use of non-slippery, non-traumatic flooring rather than slats (Barker et al., 2010; Sarjokari et al., 2013; Solano et al., 2015a),
• Access to pasture or an outside exercise lot (Chapinal et al., 2013; Hernandez-Mendo et al., 2007; Popescu et al., 2013; Rouha-Mulleder, et al., 2009)
• Use of a divided feed barrier (rather than a post and rail system) (Sarjokari et al., 2013),
• Wider feed alleys (Sarjokari et al., 2013; Westin et al., 2016),
• Access to a trim-chute for treatment and use of an effective footbath program (eg. Pérez-Cabal and Alenda. 2014)
• Prompt recognition and treatment of lameness (Barker at al., 2010)
When you implement these approaches … it works!

Cook et al, JDS 99:5879, 2016
Lameness Prevalence in AMS Herds

Significant lameness challenges in AMS units coupled with disappointing milk production

Westin et al., 2016: 15.1%
King et al., 2016: 26.2%
Endres and Salfer: 31.9%
AMS Performance in North America  
(635 herds)

<table>
<thead>
<tr>
<th>Numeric Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cows per Robot</td>
<td>50.5</td>
<td>9.54</td>
</tr>
<tr>
<td>Number of Refusals (per cow per day)</td>
<td>1.86</td>
<td>1.38</td>
</tr>
<tr>
<td>Number of Failures (per robot per day)</td>
<td>5.49</td>
<td>3.46</td>
</tr>
<tr>
<td>Milk Production per Cow per Day lb (kg)</td>
<td>70 (32)</td>
<td>4.91</td>
</tr>
<tr>
<td>Milk Production per Robot per Day lb (kg)</td>
<td>3580 (1627)</td>
<td>397</td>
</tr>
<tr>
<td>Number of Milkings (per cow per day)</td>
<td>2.91</td>
<td>0.36</td>
</tr>
<tr>
<td>Milk Speed (lb (kg) per minute)</td>
<td>5.7 (2.6)</td>
<td>0.31</td>
</tr>
<tr>
<td>Average Boxtime (minutes)</td>
<td>6.84</td>
<td>0.70</td>
</tr>
<tr>
<td>Number of Connection Attempts (per cow per day)</td>
<td>1.41</td>
<td>0.23</td>
</tr>
</tbody>
</table>

70 lb of milk from 2.9 milkings per day ….. Unimpressive!

Tremblay et al, JDS 99:3824-3837, 2016
AMS: Poor Decision Making?

- Too many cows per robot
- Slatted floors
- Mattress beds
- Insufficient bunk space
- Guided-flow systems
- Poor ventilation and cooling

What we’ve learned about cow comfort from conventional herds applies just as much to AMS units!
AMS Design Cow Priorities

- Efficient work routines – locate AMS units close together
- Minimum 2 AMS units per lactating pen
- 50-55 cows per unit max
- Free-flow system
- Deep bedded stalls not mattresses, with access for bedding equipment
- Automatic scrapers or flush, not slatted floors
- Maximize bunk space (no more than 3-rows of stalls with cross overs at least every 20 stalls)
- Headlocks at the bunk
- Calf warmer close to maternity for ~1 day of calves
- Fresh cow pen with freestalls for ~ 21 day stay with 24/7 access to robot
- Separate pen for first lactation heifers (>250 cows)
- Fetch pen and adjacent handling chute and vet room
- Separate hoof trimming area with outside access for mobile chute
- Footbath in a return lane. Bath is 10-12’ long.
- Small sort area for cows in heat/treatment cows – manual robot access
The FARM Program goal is that 93% or more of the lactating and dry herd scores a 2 or less on the FARM Hock and Knee Lesion Scorecard.

Hock and knee lesions (swelling, abrasion and even ulceration) are an important indication of inadequate bedding and lack of animal comfort. Dairy farms with a higher prevalence of hock lesions also tend to have a higher number of lame cows. A healthy hock is free from hair loss (the hair coat is smooth and continuous with the rest of the leg) and swelling. Skin breakage provides an opportunity for infection to occur, which can lead to swelling, discomfort and lameness.

### 1 = No hair loss/swelling
Hair loss less than a quarter sized, with no lesion or swelling.

### 2 = Some hair loss/no swelling
Hair loss at least the size of a quarter, no swelling.

### 3 = Severe swelling and/or abrasion through the hide
Severe swelling and/or abrasion through the hide. Lesion may be purulent or bleeding.

The Scoring System applies in the same way when evaluating the Knee.
Hock Lesions – An even bigger global problem!

Worldwide average ~ 53%
Hair loss associated with lack of bedding and repositioning on a mat/mattress surface – friction injury
Relationship between hock injury and lameness

\[ y = 1.8679x + 25.88 \]

\[ R^2 = 0.22272 \]
Abrasion and swelling associated with a change in stall use behavior .....
These are decubitus ulcers or ‘bed sores’ caused by altered stall use behavior ….

- Lame cows have longer lying bouts than non-lame cows (Ito et al., 2010)
- Represents a reluctance to change position (Cook and Nordlund, 2009)
- Pressure injury = decubitus ulcer

- Lame cows in the month prior to hock assessment are more likely to have severe hock injury (Lim et al., 2013)
Prevalence of Hock Abrasion by Housing and Surface Type

(Cook, JAVMA 223: 1324, 2003)
Bed Surfaces and Lying Time
(Solano et al., JDS 99:2086,2016; 141 farms in Alberta, Ontario and Quebec)
Cushion, traction and support while rising and lying
Why lying time should never be included in an audit!

Lame cows that stand and can’t lie down

Lame cows that lie down and can’t stand

Herds with long average lying times can be very lame!
## Wisconsin Dairy Industry – Bedding!

<table>
<thead>
<tr>
<th></th>
<th>Inorganic (Sand)</th>
<th>Manure Solids</th>
<th>Organic</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%) =</td>
<td>156 (60%)</td>
<td>29 (9%)</td>
<td>62 (19%)</td>
</tr>
<tr>
<td>Rolling Average Milk (lb)</td>
<td>28,314</td>
<td>25,913</td>
<td>26,455</td>
</tr>
<tr>
<td>SCC (‘000/ml)</td>
<td>198</td>
<td>248</td>
<td>220</td>
</tr>
</tbody>
</table>

Rowbotham and Ruegg, JDS 98:1-21, 2015 WI herds shipping more than 25,000lb per day
Knee (Carpal) Lesions

Worldwide average ~ 48%
Knee (Carpal) Injuries

High rates of knee hair loss associated with recycled sand herds
Relationship between knee (carpal) injury and lameness

\[ y = 0.6218x + 44.911 \]
\[ R^2 = 0.03421 \]
Neck Injuries (9% cows)

Most commonly associated with post and rail feed bunks and rails that are too low and not set forward from the feed curb.
Back Injuries (4% cows)
Back and other injuries often farm specific
The FARM Program goal for Body Condition Score in a herd is that 99% or more of all animals score 2.0 or higher on the FARM Body Condition Score Scale.

The Body Condition Score (BCS) Scale is 1 to 5, where:

1 = Gaunt animal, having no fatty tissue around the tail head or short rib region
2 = Thin animal, with a shallow cavity around the tail head region
3 = Good condition
4 = Animal with no depression in the loin area and one where the short ribs cannot be felt
5 = Animal having a thick layer of fatty tissue around her short ribs and over her tail head region

For purposes of evaluating animal well-being, the FARM Program goal targets identifying the percentage of all animals that have a BCS less than 2.0. View each of the areas shown below to determine body condition.

Below, key areas are identified on the left picture and referenced with red arrows on the right picture for clear viewing.

The cow in Picture B demonstrates BCS of less than 2.0. If the animal being scored has more fat cover than the animal in Picture B, the BCS will be a 2.0 or greater.

View the hook-thurl-pin section from the side. If this section has fat cover, then the BCS will be a 2.0 or greater. If the hook-thurl-pin section is nearly devoid of any fat cover, then the BCS will be less than 2.0.

View the tail head and sacral ligaments from the rear. If both of these ligaments are clearly visible, then the BCS will be less than 2.0. If these ligaments are not clearly visible, with fat cover, then the BCS will be 2.0 or greater.
No cow should be managed less than a BCS 2.25!

Chart adapted from a spreadsheet originally developed by J. Fetrow, VMD, MBA
When we focus on the outcome of the process rather than the process itself we improve animal welfare!
Audits legislate against the bottom end of the industry by setting minimum standards.

We make the average farm better by engaging them in the process of continuous improvement by benchmarking measurable outcomes!
… and creating a plan to implement solutions!
Housing Module
The Guide to Welfare-Friendly Dairy Cattle Housing

Lifestep Lameness Module
A Lesion-Oriented, Life Cycle Approach to Lameness Prevention

Calves Module
Coming Soon
• AgSource Cooperative Services DHIA served herds, from 3,078 herds in Upper Midwest with complete data, sorted 557 herds >200 cows likely to be freestall housed
• Herds grouped into one of 6 clusters
• Telephone survey all 557 herds (201 responses)
• Visited 22 herds in each of clusters 1, 2 and 6 (66 total) averaging ~90lb ECM/cow/day
Cluster Group Characteristics (least squares means)
Color variation (generally) represents “best” to “worst”

<table>
<thead>
<tr>
<th>DHI Variable</th>
<th>Group 1 (n = 171)</th>
<th>Group 2 (n = 86)</th>
<th>Group 3 (n = 97)</th>
<th>Group 4 (n = 67)</th>
<th>Group 5 (n = 62)</th>
<th>Group 6 (n = 74)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herd size, cows, lowest – highest</td>
<td>493\textsuperscript{b}</td>
<td>270\textsuperscript{e}</td>
<td>365\textsuperscript{cd}</td>
<td>270\textsuperscript{de}</td>
<td>403\textsuperscript{bc}</td>
<td>1097\textsuperscript{a}</td>
</tr>
<tr>
<td>Milking freq., lowest – highest</td>
<td>3.0\textsuperscript{a}</td>
<td>2.0\textsuperscript{d}</td>
<td>2.9\textsuperscript{a}</td>
<td>2.2\textsuperscript{c}</td>
<td>2.8\textsuperscript{b}</td>
<td>3.0\textsuperscript{a}</td>
</tr>
<tr>
<td>% 1\textsuperscript{st} Lactation, lowest – highest</td>
<td>38.4\textsuperscript{b}</td>
<td>38.1\textsuperscript{b}</td>
<td>38.6\textsuperscript{b}</td>
<td>38.0\textsuperscript{b}</td>
<td>37.8\textsuperscript{b}</td>
<td>43.8\textsuperscript{a}</td>
</tr>
<tr>
<td>Energy Corrected Milk, lb</td>
<td>92\textsuperscript{a}</td>
<td>87\textsuperscript{b}</td>
<td>88\textsuperscript{ab}</td>
<td>75\textsuperscript{d}</td>
<td>81\textsuperscript{c}</td>
<td>88\textsuperscript{ab}</td>
</tr>
<tr>
<td>Days In Milk</td>
<td>182.9\textsuperscript{c}</td>
<td>179.7\textsuperscript{c}</td>
<td>195.5\textsuperscript{a}</td>
<td>189.1\textsuperscript{b}</td>
<td>192.5\textsuperscript{ab}</td>
<td>181.8\textsuperscript{c}</td>
</tr>
<tr>
<td>Days Dry</td>
<td>59.4\textsuperscript{ab}</td>
<td>59.4\textsuperscript{ab}</td>
<td>54.7\textsuperscript{c}</td>
<td>60.7\textsuperscript{a}</td>
<td>60.8\textsuperscript{a}</td>
<td>57.0\textsuperscript{bc}</td>
</tr>
<tr>
<td>Age at 1\textsuperscript{st} Calving</td>
<td>24.1\textsuperscript{d}</td>
<td>24.5\textsuperscript{dc}</td>
<td>25.3\textsuperscript{ab}</td>
<td>25.6\textsuperscript{a}</td>
<td>24.9\textsuperscript{bc}</td>
<td>23.4\textsuperscript{e}</td>
</tr>
<tr>
<td>Transition Cow Index, lb</td>
<td>+457\textsuperscript{a}</td>
<td>+519\textsuperscript{a}</td>
<td>-24\textsuperscript{b}</td>
<td>-378\textsuperscript{c}</td>
<td>-468\textsuperscript{c}</td>
<td>-31\textsuperscript{b}</td>
</tr>
<tr>
<td>Milk Peak Ratio</td>
<td>74.4\textsuperscript{c}</td>
<td>74.1\textsuperscript{c}</td>
<td>77.8\textsuperscript{a}</td>
<td>77.6\textsuperscript{a}</td>
<td>76.4\textsuperscript{ab}</td>
<td>74.9\textsuperscript{bc}</td>
</tr>
<tr>
<td>Linear Somatic Cell Score</td>
<td>2.2\textsuperscript{d}</td>
<td>2.3\textsuperscript{d}</td>
<td>2.6\textsuperscript{c}</td>
<td>3.0\textsuperscript{a}</td>
<td>2.8\textsuperscript{b}</td>
<td>2.7\textsuperscript{c}</td>
</tr>
<tr>
<td>% New Udder Infections</td>
<td>8.7\textsuperscript{c}</td>
<td>8.9\textsuperscript{c}</td>
<td>11.9\textsuperscript{b}</td>
<td>14.7\textsuperscript{a}</td>
<td>13.9\textsuperscript{a}</td>
<td>12.6\textsuperscript{b}</td>
</tr>
<tr>
<td>% Udder Infections 1\textsuperscript{st} test</td>
<td>11.0\textsuperscript{e}</td>
<td>13.7\textsuperscript{d}</td>
<td>15.7\textsuperscript{c}</td>
<td>19.9\textsuperscript{a}</td>
<td>17.8\textsuperscript{b}</td>
<td>14.5\textsuperscript{cd}</td>
</tr>
<tr>
<td>% Dry Period Infection Cures</td>
<td>75.5\textsuperscript{a}</td>
<td>66.4\textsuperscript{b}</td>
<td>63.9\textsuperscript{b}</td>
<td>56.5\textsuperscript{c}</td>
<td>63.7\textsuperscript{b}</td>
<td>71.5\textsuperscript{a}</td>
</tr>
<tr>
<td>% Culled, Non-dairy, lowest – highest</td>
<td>33.5\textsuperscript{b}</td>
<td>36.1\textsuperscript{b}</td>
<td>35.9\textsuperscript{b}</td>
<td>32.6\textsuperscript{b}</td>
<td>40.0\textsuperscript{a}</td>
<td>43.0\textsuperscript{a}</td>
</tr>
<tr>
<td>% Cows Died</td>
<td>5.7\textsuperscript{cd}</td>
<td>5.7\textsuperscript{cd}</td>
<td>6.3\textsuperscript{bc}</td>
<td>4.9\textsuperscript{d}</td>
<td>12.4\textsuperscript{a}</td>
<td>7.6\textsuperscript{b}</td>
</tr>
<tr>
<td>% Cows Died by 60 DIM</td>
<td>2.3\textsuperscript{bc}</td>
<td>2.7\textsuperscript{b}</td>
<td>2.4\textsuperscript{bc}</td>
<td>1.8\textsuperscript{c}</td>
<td>5.7\textsuperscript{a}</td>
<td>2.7\textsuperscript{b}</td>
</tr>
</tbody>
</table>
Lameness and Injury: Effect of Stall Base Type

Cook et al, JDS 99:5879, 2016
Select Housing and Management Characteristics of Elite Wisconsin Dairy Herds (n=66 Groups 1, 2 and 6)

<table>
<thead>
<tr>
<th>Management Characteristic</th>
<th>% Herds or Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep loose bedded stalls (sand)</td>
<td>70 (62)</td>
</tr>
<tr>
<td>2-row stall layout for pen</td>
<td>61</td>
</tr>
<tr>
<td>Headlocks at the feedbunk</td>
<td>83</td>
</tr>
<tr>
<td>Solid floor (vs slats)</td>
<td>100</td>
</tr>
<tr>
<td>Manual manure removal from alleys (vs scraper)</td>
<td>73</td>
</tr>
<tr>
<td>Rubber freestall alley flooring</td>
<td>5</td>
</tr>
<tr>
<td>Rubber parlor flooring</td>
<td>68</td>
</tr>
<tr>
<td>Fans over resting area</td>
<td>96</td>
</tr>
<tr>
<td>Outside access</td>
<td>9</td>
</tr>
<tr>
<td>Trim cows feet at least once per lactation</td>
<td>88</td>
</tr>
<tr>
<td>Footbath frequency (mean times per week)</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Significant factors at P<0.05 in final model for lameness: Stall Surface (deep bed 7.2% vs. mat 14.1%), Pasture Access (yes 5.9% vs. no 15.4%), Cows per FTE (benefit of fewer cows per FTE)
We can house cows in very high production herds and maintain high standards of physical well-being!
We went viral!

...I read the comments
biggest complaint was that people expect cows to graze outside!
Why farmers graze their cattle

• Favorable climate for grass growth
• Economically viable
• Allowance - DNR puts strict limits on some regions for grazing
• Required to for USDA Organic Standards

• Most producers that graze, house their cattle half the year, so cows are still housed!
Are grazing expectations realistic?

- The modern high producing dairy cow is probably as similar to its grazing ancestor the aurochs as a pet dog is to its wolf ancestor.
- Consumers don’t keep their pet dogs in packs and expect them to hunt live prey…
- Why do they expect / require cows to graze?
Free Choice Between Pasture and Freestall Housing

(Legrand et al., 2009. JDS 92:3651-3658)

Cows preferred to be indoors during the day and outside during the night.
Cows are incredibly versatile and should be managed in a manner that best fits the climate.
Benefits of Planned Pasture Access

(Chapinal et al., 2013; Hernandez-Mendo et al., 2007; Popescu et al., 2013; Rouha-Mulleder, et al., 2009)

Some of the cows, some of the time may improve lameness
Future Concerns

• Outside access – required?
• Individual pens and hutches for calves vs pair raising and groups
• Cow calf separation at birth
• Tiestall housing – restriction of movement
• Overstocking
.... and I will continue to emphasize that we should focus on the outcome, not the process!