Cow comfort and lameness in dairy cows

Dan Weary
Effects of stall design and management on usage: bedding surface
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Days after sand bedding was added and leveled

Effects of stall design and management on usage: bedding surface

Effects of stall design and management on usage: bedding surface

Lying time (h / 24 h)

Decline in bedding (cm)

Exp. 1

Effects of stall design and management on usage: bedding surface

Benchmarking cow comfort on commercial farms
FLOORING

Flower et al., 2007
Neveux et al., 2006

LOCOMOTION

SCORING

Flower and Weary, 2006; 2009
Flower et al., 2008

IDENTIFYING HIGH RISK COWS

Proudfoot et al., 2009
Dipple et al., 2011

LAMENESS AND HOUSING

Hernandez-Mendo et al. 2007
Flower et al. 2007
Bernardi et al. 2009
Ito et al. 2009; 2010
Chapinel et al. 2010
Individual reports help producers see where they rank among farms in their region.

Thank you for participating in the C.O.W.S. (Comfort • Oxidative Balance • Well-Being • Sustainability) benchmarking project. The data collected on your farm was combined with data from 39 other farms we visited and was used to develop the benchmarking information for your region.

In this report, you will be able to compare the data from your farm to the regional benchmarks. The report shows the summary of the benchmarking information from participating herds in New York, Vermont, and Pennsylvania, and how your herd compares to the others in the region.

Please use the C.O.W.S. handbook for instructions on how to interpret your report. The handbook also provides information on factors known to affect cow comfort and lameness that may help improve the conditions on your farm and enhance the performance of your herd.
Lameness on BC Farms

von Keyserlingk et al., 2012 J. Dairy Sci. 95: 7399-7408
Differences within and among regions

% of cows scored

Farms

von Keyserlingk et al., 2012 J. Dairy Sci. 95: 7399-7408
Differences within and among regions

von Keyserlingk et al., 2012 J. Dairy Sci. 95: 7399-7408
Use of deep bedding = 50% fewer lame cows

OR 0.48; CI 0.29 - 0.79; P < 0.01

Chapinal et al. 2013, J. Dairy Sci. 96: 318-328
Access to pasture at sometime during the dry period = 50% fewer lame cows

OR 0.52; CI 0.32 - 0.85; P< 0.01

Chapinal et al. 2013, J. Dairy Sci. 96: 318-328
Hock lesions

Hock Assessment Chart for Cattle

Score = 1
No swelling. No hair is missing.

Score = 2
No swelling. Bald area on the hock.

Score = 3
Swelling is evident or there is a lesion through the hide.

The normal, healthy hock is free from skin lesions and swelling. Ideally, the hair coat in that area is smooth and continuous with the rest of the leg.

Hock health is an important indicator of the abrasiveness of stall bedding and cow comfort. Injury is usually the result of prolonged exposure to an abrasive stall surface. Skin breakage provides an opportunity for infection to occur, which can lead to swelling, discomfort, and possibly lameness.

A consistent method of scoring hocks for swelling and hair loss allows you to assess the need to modify your stall management and can help you evaluate the effect of management changes.

Herd Assessment Method
1. Score the rear hock (one or both) from at least 20 cows for each housing or management group.
2. For each score, enter a stroke in the appropriate box of the table.
3. Count the number of strokes for each score and enter in the “tally” box.
4. Enter the total number of hocks scored.
5. Divide “tally” by “total number” and multiply by 100. Enter as percent for each score.
6. Monitor monthly to assess a change in management or stall surface.
7. Note that in deep sand stalls that are well maintained, it is rare to find a hock with a score greater than 1.

Adapted from James Nocak

www.anisci.cornell.edu/prodairy/pdf/hockscore.pdf
Hock lesions

von Keyserlingk et al., 2012 J. Dairy Sci. 95: 7399-7408
Hock lesions

Odds ratio

Mattress | Deep bedding | Sand bedding | Dry* bedding | Pasture access

* Bedding dry matter > 84%

P<0.01 for each risk factor (Univariable)
Pick your choice from the comfort menu

<table>
<thead>
<tr>
<th>Lying surface</th>
<th>Deep bedding; sand bedding; dry bedding</th>
<th>Mattresses, rubber mats or concrete with little or no bedding</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1 to 13)</td>
<td></td>
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<tr>
<td>Stalls design</td>
<td>Open pack; large free stalls with no neck rail or brisket locator</td>
<td>Stalls that restrict free standing and lying movements</td>
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<tr>
<td>(14 to 19)</td>
<td></td>
<td></td>
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<tr>
<td>Standing surface</td>
<td>Dry, soft surfaces; free choice access to well managed pasture</td>
<td>Wet concrete; contact with manure slurry; automatic scrapers</td>
</tr>
<tr>
<td>(20 to 30)</td>
<td></td>
<td></td>
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</tbody>
</table>

1 to 13 Andreason & Forkman, 2012; Cook et al., 2004; 2008; Drissler et al., 2005; Espejo et al., 2006; Fregonesi et al., 2007; Fulwider et al., 2007; Husfeldt et al., 2012; Lombard et al., 2010; Mowbray et al., 2003; Reich et al., 2010; Wear & Taszkun, 2000; 14 to 19 Bernardi et al., 2009; Cook 2003; Dippel, et al., 2009; Espejo & Endres, 2007; Sogstad et al., 2005; Tucker et al., 2006; 20 to 30 Barker et al., 2010; Chapinal et al., 2013; Cramer et al., 2009; Flower et al., 2007; Haskell et al., 2006; Hernandez-Mendo et al., 2007; Keil et al., 2006; Loberg et al., 2004; Phillips & Morris, 2001; Rushen & de Passillé, 2006; Rutherford et al., 2008; Somers et al., 2003; Somers et al., 2005