Farm Size and Animal Welfare

Dan Weary
The changing face of the dairy farm

No. of dairy farms in the U.S. (1,000s)

Redrawn from USDA, 2007
STOP Factory Farming
For the animals. For the people. For the planet.
Lameness in relation to dairy farm size?

New York, Pennsylvania and Vermont

Chapinal et al. 2013, J. Dairy Sci. 96: 318-328
Lameness in relation to dairy farm size?

California

R² = 0.22

Chapinal et al. 2013, J. Dairy Sci. 96: 318-328
Lameness in relation to dairy farm size?

China

\[ R^2 = 0.33 \]

Welfare risks associated with larger farms:

- Technologies may harm animals
- Standard of care may decline
- Beneficial management practices may become impractical
Changes in number of cows in tie-stalls versus loose housing on US dairy farms (1996-2007)

NAHMS, 2007
Welfare risks associated with larger farms:

- Technologies may harm animals
- Standard of care may decline
- Beneficial practices may become impractical
Approach distance (m)

Farm size (no. of milking cows)

Redrawn from Waiblinger & Menke 1999
<table>
<thead>
<tr>
<th>Management Practice</th>
<th>&lt;100</th>
<th>100-499</th>
<th>≥500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separate Dry/Mat. Area</td>
<td>52%</td>
<td>81%</td>
<td>90%</td>
</tr>
<tr>
<td>Scoring system dystocia</td>
<td>35%</td>
<td>43%</td>
<td>58%</td>
</tr>
<tr>
<td>Mean time to 1st colostrum</td>
<td>3.4hrs</td>
<td>3.3hrs</td>
<td>2.8hrs</td>
</tr>
<tr>
<td>% test IgG/L</td>
<td>8%</td>
<td>20%</td>
<td>45%</td>
</tr>
<tr>
<td>% monitor serum proteins</td>
<td>1%</td>
<td>2%</td>
<td>15%</td>
</tr>
<tr>
<td>Off-site heifer rearing</td>
<td>5%</td>
<td>16%</td>
<td>46%</td>
</tr>
<tr>
<td>Dehorned causing bleeding</td>
<td>43%</td>
<td>44%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Source: USDA-NAHMS 2007
Professionalism?

Larger farms are more likely to:

• *Have specialized staff and training*

• *Formal SOPs*

• *Performance incentives*
Welfare risks associated with larger farms:

- Technologies may harm animals
- Standard of care may decline
- Beneficial practices may become impractical
Access to pasture

Legrand et al., 2009. J. Dairy Sci. 92: 3651-3658
Partial access to pasture

Week relative to calving

Kg/d DM of TMR

Control
Partial access to pasture

Kg/d DM of TMR

Week relative to calving

Chapinal et al., 2010. Livestock Sci. 129: 104–110
Welfare risks associated with larger farms:

- Technologies may harm animals
- Standard of care may decline
- Certain beneficial management practices may become impractical
Welfare risks associated with *unprofitable* farms?

“…large-scale production is not in itself an explanatory factor in relation to animal neglect. Instead, the analysis finds that animal neglect is embedded in a complex network of other problems in agriculture. Farmers who have the highest risk of being convicted of animal neglect are more likely to be troubled by both economic and psychiatric problems.”

Andrade and Anneberg, 2013
Welfare risks associated with *unprofitable* farms?

% of farms that are profitable

![Graph showing the percentage of farms that are profitable by farm size.](Redrawn from USDA, 2007)
Peasants Bringing Home a Calf Born in the Fields, 1864, Jean-François Millet
Conclusions:

• Farms are becoming larger – create solutions to improve the lives of animals on these farms

• Large farms use data to make decisions and preferentially benefit from expensive technology that provide data

• Large farms benefit from professional management that reduces welfare risks

• Larger farms are more likely to be profitable, likely also reducing risks