Improving Animal Welfare: A Practical Approach

Temple Grandin, Colorado State University

Calm animals are easier to handle than excited fearful animals.

* 20 to 30 minutes is required for an excited animal to calm down.

Tie up loose chain ends that scare animals.

A change in flooring or a drain may retard movement.

Allow the leader time to investigate.

Reflections scare animals.

Cattle can see people through the open sides.

To find distractions: Get in the chute to see it from the animal's point of view.
Shadows may impede movement
Sunny days are the worst

Cattle may refuse to enter a dark building

Skylights installed in the walls will improve cattle movement into an existing dark building

Solid fences keep animals calmer
Solid fences are especially important for animals with a large flight zone

Curved systems work better than straight ones because animals will turn back in the same direction they came from

The Flight Zone Is The Animal’s Safety Zone
Calm animals will have a small flight zone and tame animals will have no flight zone
A flag can be used to turn an animal by blocking the animal’s vision on one side.

The crowd pen should be filled half full with cattle or pigs.

Animals also “watch” with their ears for potential danger.

The horse has an ear pointed at both a photographer and a zebra.

Behavioral Principles of Restraint

- Non slip flooring – Prevents fear of falling
- No sudden jerky motion
- Optimal pressure – not too tight, not too loose
- Block vision (grazing animals)

Cattle that become agitated in the squeeze chute have lower weight gains.

Cattle that run fast out of the squeeze chute may perform poorly.

Voisinet et al 1997, Fell et al 1999

Cortisol Levels During Restraint

- Beef Cattle - Rough Handling
- Electric Prods
- Deer - Tranquilizer Dart
- Deer - Netted
- Beef Cattle - Quiet Handling
- Dairy Cows
- Cattle Baseline
- Trained Antelope

Voisinet et al 1997, Fell et al 1999
Cattle perceive a man on a horse and a man on foot as two different things. They need to be habituated to both.

You Manage What You Measure
- Maintaining high standards requires continuous measurement.
- Handling quality can be maintained by regular audits of your handling practices with an objective numerical scoring system.

PREVENTS BAD FROM BECOMING NORMAL

A Good Auditing System Must Not be Vague
Ban the words "properly", "adequate" and "sufficient". What is "proper" to one auditor might be considered "terrible" by another.

A guideline must have clearly written standards which are not subject to different interpretations by different people.

Example of a Clearly Worded Guideline
All pigs must have enough space to lie down without being on top of each other.

American Meat Institute Basic Critical Control Points (Core Criteria)
1. Percentage of animals stunned correctly on the first attempt.
2. Percentage of animals rendered insensible.
3. Percentage of animals prodded with an electric prod.
4. Percentage of animals that vocalize.
5. Percentage of animals that slip or fall.

All scores are on a per animal basis.

Objective Scoring Reduces Subjectivity and Improves Agreement Between Different Auditors from Different Customers

<table>
<thead>
<tr>
<th>Auditing System</th>
<th>% of Plants That Passed the Stunning Audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>System 1</td>
<td>85</td>
</tr>
<tr>
<td>System 2</td>
<td>86</td>
</tr>
<tr>
<td>System 3</td>
<td>85</td>
</tr>
</tbody>
</table>
Percentage of Beef Plants That Stunned 95% or More Cattle with the First Shot

<table>
<thead>
<tr>
<th>Year</th>
<th>1996</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>USDA survey prior to industry wide auditing</td>
<td>30%</td>
<td>50%</td>
<td>91%</td>
<td>24%</td>
<td></td>
</tr>
<tr>
<td>McDonald’s Audits started</td>
<td>Continued auditing by major customers</td>
<td>Continuous auditing maintains good performance</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

American Meat Institute Objective Scoring System

It measures a small number of critical control points that will objectively locate many different problems affecting welfare. Scoring is based on performance. When CCPs are being chosen, a good CCP will be a point that monitors a variety of problems.

HACCP Principles same as food safety

- Directly observable things that are outcomes of bad practices or bad facilities
- Not a paperwork audit

HACCP Principles same as Food Safety

- Directly observable things that are outcomes of bad practices or bad facilities
- Not a paperwork audit

Use Scoring to Show How Changes Made in Your Operation Improved Handling

Effect of Air Blowing into the Faces of Cattle at the Restrainer Entrance on Vocalization Score

- % Cattle Vocalizing Due to Balking & Increased Electric Prod Use
  - Air Blowing Out Through Restrainer Entrance Towards Approaching Cattle
  - No Air Movement Towards the Cattle

Electric Prod Use on Pigs Was Reduced By Adding Lighting at the Restrainer Entrance

- % Pigs Electric Prodded
  - Dark Entrance: 38%
  - Well Lit Entrance: 4%

Reduction in Cattle Vocalizations After Equipment Modifications

- % Cattle Vocalizing
  - Before Modification: 8%
  - After Modification: 23%

- Equipment Modifications:
  - Install Light on Restrainer Entrance
  - Install False Floor to Reduce Balking
  - Reduce Pressure of Neck Restraint
Animals Are Afraid of Dark Places

Adding a light at the restrainer entrance or making other lighting changes that eliminate shiny reflections will improve animal movement.

Three Types of Variables for Auditing Animal Welfare

1. Animal based outcome measure (continuous variables)
2. Prohibited practices (discreet variable)
3. Input-based engineering variables (discreet variable)

Animal-Based Outcome Measures (Continuous Variable) Should Receive the Most Emphasis

- Body Condition Score
- Lameness
- Dirty Animals
- Injuries, Sores, Swellings, Cancer Eye
- Coat Condition (Organic)
- Ammonia Levels (Indoor facilities)
- Abnormal Behaviors

Example: Lameness is an Outcome of Many Bad Conditions

- Poor Housing
- Rapid Growth
- Poor Leg Conformation
- Poor Foot Care
- Foot Diseases
- Injuries

Examples: Prohibited Practices

- Sow Gestation Stalls
- Docking Dairy Cow Tails
- Beating Animals
- Small Chicken Cages
Example: Input Based Measures

- Measures
- Space Requirements for Housing
- Space Requirements for Transport
- Stunning Equipment Specifications

www.grandin.com