Low-Stress Dairy Handling Systems

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2011 Missouri Dairy Grazing Conference

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Components of a Cattle Handling System

- The design and maintenance of the facilities
- The cattle handling skills of the people

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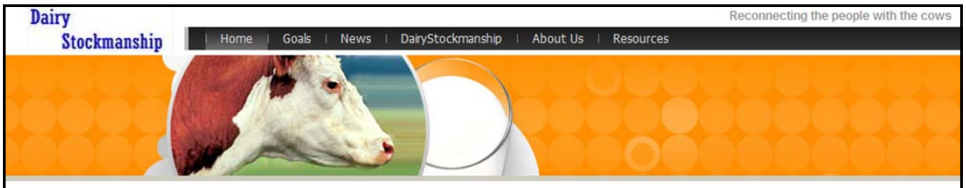
Poor Handling Skills are the Result of a Disconnection between the People and the Livestock

- Often facilitated by technology
- Lack of awareness by the people



- Our goal is to re-connect stockmanship to the dairy industry
  - Dairy Employees
  - Dairy Veterinarians
  - Dairy Professionals
  - Dairy Owners
- Includes all dairy production systems

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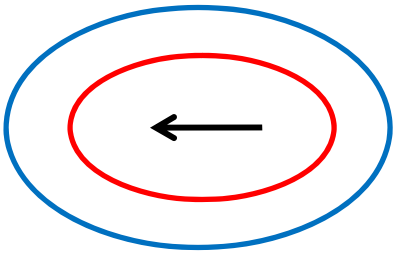
HANDLING, MOVEMENT AND TRANSPORTATION
Employees should be properly trained to handle animals with a minimum of stress to the animal, and the consequences of inhumane handling should be known and enforced.

Training Programs should:

1. Be based on sound science
2. Produce the desired results

Stockmanship Principles

- Pressure area surrounds the flight zone



- Apply pressure to animals properly

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All behavior is a product of

- Biological variables
  - Species history
    - Biological evolution and genetic makeup
- Environmental variables
  - The present environment
    - Including the internal physiological environment
  - The past environment
    - What has happened to the individual in the past

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- Ethologist
  - One who studies animal behavior, as it occurs in a natural environment
- Behaviorist
  - One who studies behavior, in humans or animals

Animal Behavior Society

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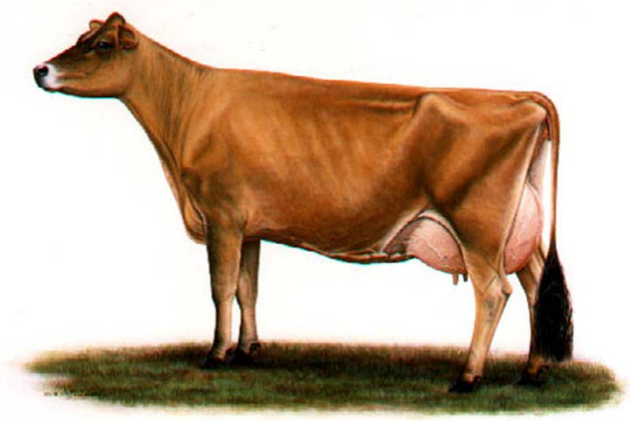
Life History Strategy

- Cattle are herbivores, a prey species that exhibits herding behaviors
- They do not communicate verbally, but rather experience the world with the uniqueness of their 5 senses

Communicate so the Cow Understands

1. Taste
2. Smell
3. Hearing
4. Sight
5. Touch



Taste & Smell

- Taste buds
- Olfactory epithelium
- VomeroNasal Organ
  - Flehman behavior

- Dew drops often form on nose or muzzle
  - Wiped with tongue, sensed by VNO
- Scents that are socially important to animals are derived from waste products: urine, feces, sweat, breath

Hearing

- Humans
- Cattle
- Dogs

Low ----------High

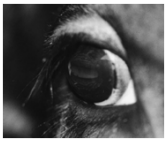
Frequency in Kilohertz

Cattle and Noise

- Evidence shows that cattle are sensitive to auditory contact with humans
- Researchers have found that cattle show a similar aversion, based on avoidance, to hitting as to shouting by humans

Pajor EA, Rushen J, de Passile AMB. Aversion learning techniques to evaluate dairy cattle handling techniques. *Appl Animal Behav Sci* 2000; 69:89-102

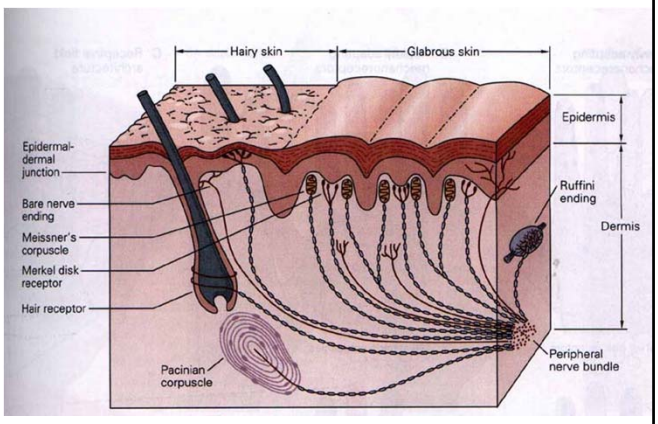
Sight



- Primary sense used by grazing animals
- Horizontal, rectangular pupil shape
- Narrow field of vertical vision
- Located on sides of the head and bulbular
- Wide field of vision
- Poor depth perception

Touch Receptors

- Pressure
- Pain
- Warmth
- Cold

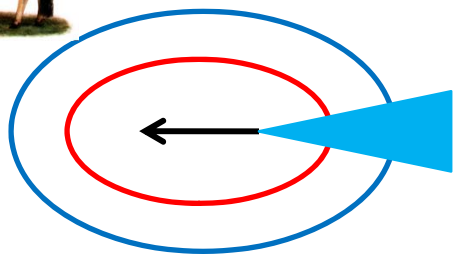


Key message

- We need to be honest with cattle and always let them see where we are
- Cattle will look (listen) to what is what is pressuring them
- *Be aware of the which senses are being stimulated, and work to avoid startle*

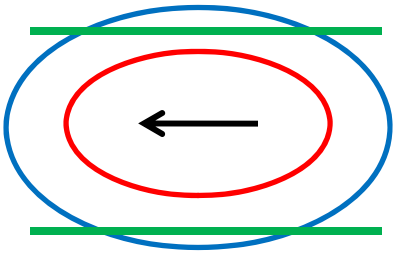
The Right Way

- The Cow cannot see behind her



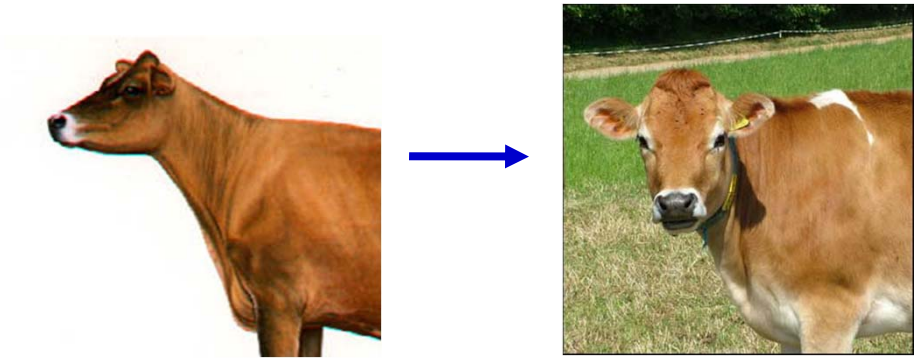
The Right Way

- The best place to let the cow see you is from her side



The Right Way

- Notice when a cow looks at you with 2 eyes



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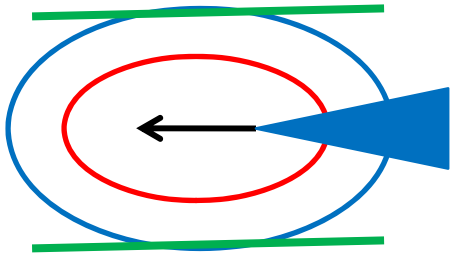
Dairy Stockmanship

- Pressure animals where they can see you



- Only 1 person should pressure at a time

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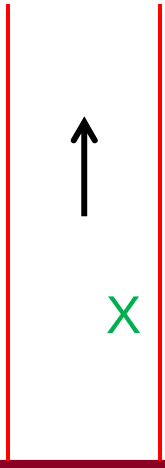
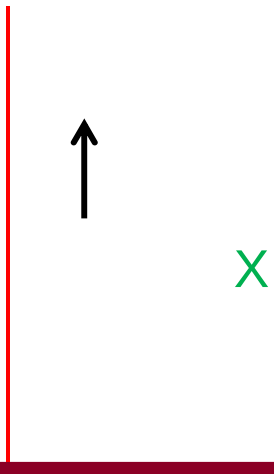
Driving a Cow



Driving a Cow



Driving a Cow

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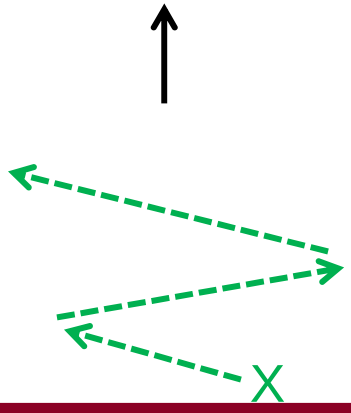
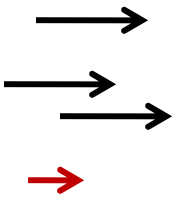


The Right Way

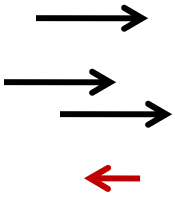
- Walking with animals will slow them down



- Cows walk 2 mph, People walk 3-4 mph

The Right Way

- Walking opposite direction speeds animals up



Low Stress Handling Systems

- Informally, this is how to work cattle with low-stress methods
- Formally, this is the study of cow behavior and her stress response
  - We can apply the sciences of behavior analysis and stress biology

Low Stress Handling Systems

- What is Low Stress?
- What is High Stress?
- What is Stress?
- What is Distress?
- What is Eustress?

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What is Stress?

- Ask a dozen people to define “stress” and you would likely get 12 different answers
- If we struggle to define stress, how can we possible measure it?

Definitions

- Stressor = event threatening or potentially threatening the homeostatic balance
- Stress Response = the bodies attempt to re-establish the homeostasis after encountering a stressor

2011 Trends in Stress Biology

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Stress Response

Robert Sapolsky

- Stress response evolved as adaptive
- Consequences of the stress response can be maladaptive
- There is a “cost” to mounting a stress response

Stress Related Disease

Sapolsky

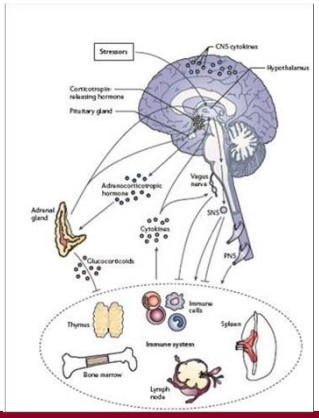
- Stress does not make you sick
- “*Stress makes you more likely to get diseases that make you sick*”

Testing for stress

- There is no litmus test for stress

Measuring the Stress Response

- Neuroendocrine system (HPA)
- Autonomic Nervous System
  - Sympathetic
  - Parasympathetic
- Immune System
- **Behavior**



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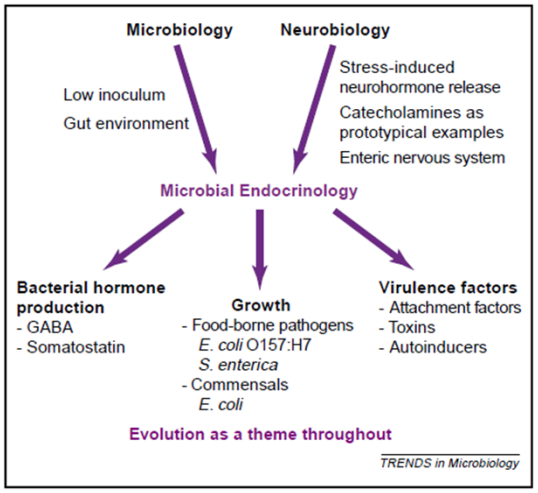
Examples Getting Cows Into the Milking Parlor



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Bud Box Technique for Moving Cattle Safely and Efficiently

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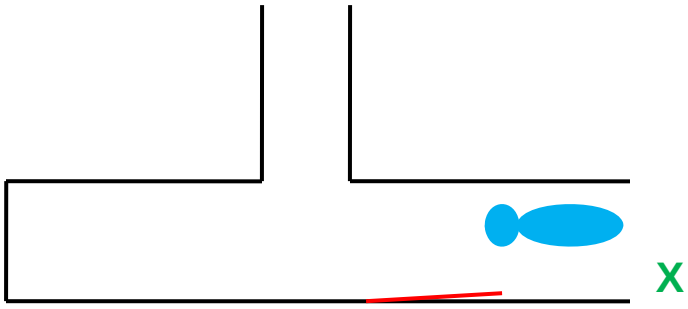
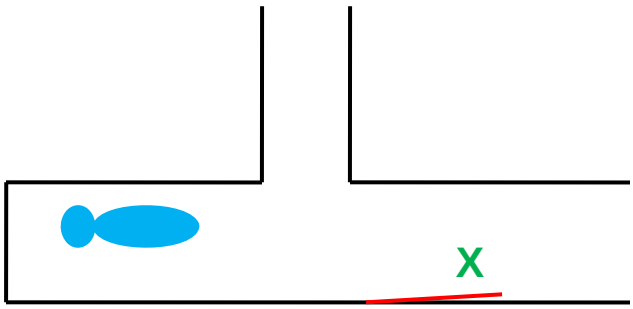


The Bud Box



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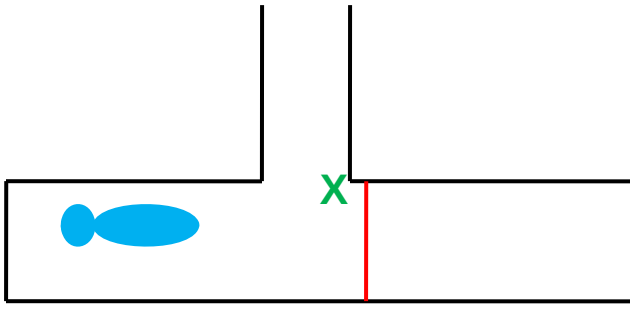

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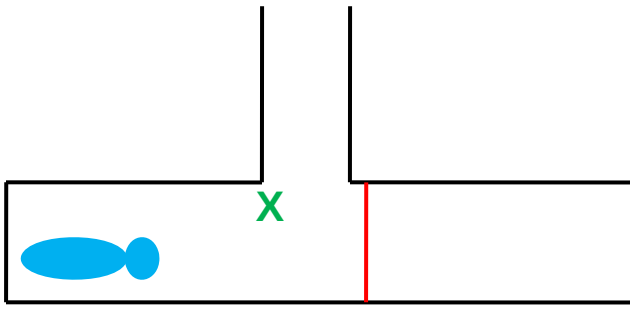

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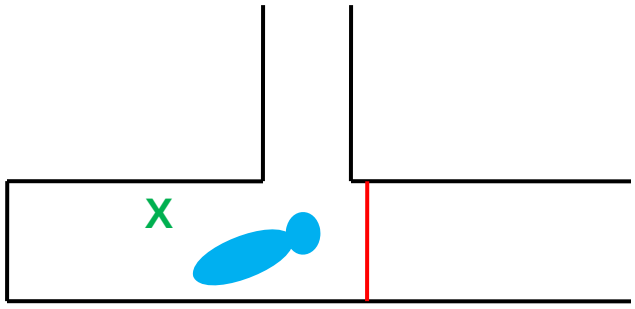

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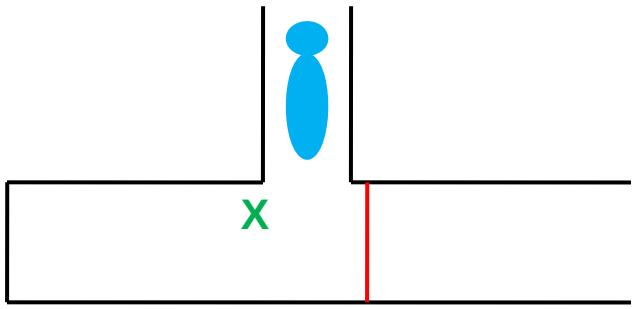

The Bud Box

Bud Box Design

- 14 x 20 to load a chute
- 14 x 30 to load a truck

- Same size
  - Regardless of the animal size
  - Regardless of the number of animals

- Exit opening wide enough for 1 animal

Components of a Cattle Handling System

- The design of the facilities
  - The maintenance of the facilities

- The cattle handling skills of the people

Dairy Stockmanship

- Every interaction between people and their livestock is important
  - Positive experiences/conditioning
  - Negative experiences/conditioning
- Be aware of the behaviors you are training your animals to perform

Interactions with Youngstock

- The concept of “Brain Plasticity”
- Important periods in behavioral development
  - Pre and Post-natal periods
  - Adolescence
- Condition the appropriate behaviors for an adult lactating cow in your production system

THANKS!

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