## Cattle Handling Facilities

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Handling Facilities Allow Application of Management Practices and Reduce Stress

A producer needs to know cattle behavior in order to make cattle do what needs to be done.
"Cow sense"

A well-designed facility will not replace lack of "cow sense"

Animals of prey Herding instinct
Dominant or "lead" animal in herd Panoramic eye sight
Sensitive hearing

What have we learned about cattle behavior?

## Territorial

Have "flight zone"
Maternal instinct
Protective (bulls)
Disposition varies and is highly heritable
Can return quickly to "natural instinct"

What have we learned about cattle behavior? (continued)

Cattle handling facilities are needed to carry out economically important management practices.

What economically important cattle practices can be carried out without restraining them?

Goal of handling facility is to complete the practices with as little stress as possible.

## Stress Levels I ncrease When Animals Are Restrained



Plan to work cattle with as much ease as possible - effective as possible, humane as possible.

## Stress causes cattle to release adrenalin (the "Fight or Flight" hormone) and cortisol.

Physiological functions are negatively impacted

## Understanding Stress in Cattle



## Blood Cortisol After Stress

- 1) Initial Alarm Reaction - elevated heart rate, respiration \& blood flow, utilization of liver glycogen;
- 2) 'Resistance' Response (slower acting) - cortisol, breakdown of fat, more glucose made in liver;
- 3) Exhaustion - muscle wasting, GI ulceration, hyperglycemia, deterioration of immune system;

Understanding Stress in Animals

## Handle Cattle So that Stress is Kept to a 'Minimum




## An Understanding of Animals Behavior is Needed to Reduce Stress

# Evaluate Each Component of the Handling Facility to Insure Proper Design and Stress Free Operation 



1. Holding Pens - An area to hold and sort cattle before or after working.
2. Crowding Pen - An area that allows the cattle to be funneled into the working chute (sweep tub).
3. Working Chute - A narrow alley used to move the cattle to the working area

5 Basic Sections of a WellDesigned Cattle Handling Facility
4. Working Area - The area where animals can be restrained with a squeeze chute or head gate to allow management practices to be carried out.
5. Loading Chute - or loading area for "goosenecks"

5 Basic Sections of a WellDesigned Cattle Handling Faculty

## Holding Pens

Build pens large enough to hold the largest number of cattle in the herd.

Allow 20 square feet per cow, 14 square feet per calf.

- Build more than one holding pen for sorting and to hold cattle following working.


## Holding Pens

| Holding Pen | Recommended Dimensions for Various <br> Cattle Weights |  |  |
| :--- | :---: | :---: | :---: |
|  | Up to 600 <br> pounds | 600 to 1,200 <br> pounds | Over 1,200 <br> pounds |
| Space per head, sq <br> ft/hd | 14 | 17 | 20 |
| Pen fence height, in | 60 | 60 | 60 |
| Post spacing, ft | 8 | 8 | 8 |
| Post depth in ground, <br> in | 30 | 30 | 30 |

## Holding Pen Dimensions




With two alleys


## Crowding Pen

## Purpose is to funnel cattle into the working chute

Proper design and construction reduces labor and stress on both the cattle and producer

- Build one side of the wall straight and the other side should enter the chute at about 30 degrees


## Crowding Pen or "J ug"

| Crowding Pen (Sweep Tub) | Recommended Dimensions for Various Cattle Weights |  |  |
| :---: | :---: | :---: | :---: |
|  | Up to 600 pounds | 600 to 1,200 pounds | Over 1,200 pounds |
| Space per head, sq ft/hd | 6 | 10 | 12 |
| Post spacing, ft | 4 to 6 | 4 to 6 | 4 to 6 |
| Solid wall height, in | 45 | 50 | 50 to 60 |

## Crowding Pen Dimensions





Pre-manufactured crowding pen

Working Chute

Should be at least 20 feet in length - to hold 3 to 4 mature cows at a time

One of the biggest problems is that producers build the working chute too wide. 22-26" for medium size cows - no more than 26 " for large breeds

Working Chute - Move Cattle to Working Area

| Working Chute | Recommended Dimensions for Various Cattle Weights |  |  |
| :---: | :---: | :---: | :---: |
|  | Up to 600 pounds | 600 to 1,200 pounds | Over 1,200 pounds |
| Straight sides |  |  |  |
| Width, in | 18 | 22 | 28 |
| Length, minimum ft | 20 | 20 | 20 |
| Sloped sides |  |  |  |
| Width at 4 ft height, in | 20 | 24 | 28 |
| Width inside at bottom, in | 15 | 16 | 18 |
| Minimum length, ft | 20 | 20 | 20 |
| Fence |  |  |  |
| Post spacing, ft | 7 | 7 | 7 |
| Post depth in ground, in | 36 to 48 | 36 to 48 | 36 to 48 |
| Solid wall height, in | 54 to 60 | 54 to 60 | 60 |
| Top rail height for gentle cattle, in | 54 to 60 | 60 | 60 |
| Top rail heighttemperamental cattle | 60 to 72 | 60 to 72 | 60 to 72 |

## Solid Walls

Circular chutes work better than straight sides

Chutes with sloping sides are better than vertical sides

Working Chute (continued)

Cattle move uphill better than downhill

Cattle tend to move best from dark area to light area

- Do not place working chute directly under edge of barn

Working Chutes (continued)




A Modified "V" Chute Allows for Cows And Calves to Be Worked in the Same Chute










## Working Area

Cattle must be restrained
Can be as simple as mounting headgate to end of working chute

Recommend a squeeze chute with headgate

- "Palpation Cage" is necessary

Working Area - Location of Application of Practices to Cattle

| Squeeze Chute |  |  |  |  | Recommended Dimensions for Various <br> Cattle Weights |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Up to 600 <br> pounds | 600 to 1,200 <br> pounds | Over 1,200 <br> pounds |  |  |  |  |
| Holding/squeeze chute | 45 | 50 | 50 |  |  |  |  |
| Height, in | 18 | 22 | 28 |  |  |  |  |
| Straight sides width, in | 6 to 8 | 8 to 12 | 14 to 16 |  |  |  |  |
| V-shaped sides width at <br> bottom, in | 5 | 5 to 8 | 5 to 8 |  |  |  |  |
| Length including head gate, ft | 5 |  |  |  |  |  |  |

## Holding/ Squeeze Chute Dimensions



## UT-BioEng Plan \#5778




## Stanchion Type Headgate



## Chutes With Openings Allowing Access To the Neck Are Desirable





Man Gate or Gate on Palpation Chute Makes Working Behind Animals Less Stressful


Gate \& Scissor Catch Behind Palp. Cage



Mobile Squeeze \& Headgate

## Loading Chutes

A narrow, inclined ramp for loading cattle
Can load from headgate

- Best located to side of working cattle
- Another option would be loading from holding pens


## Loading Chute - For Loading Cattle

| Loading Chute | Recommended Dimensions for Various Cattle Weights |  |  |
| :---: | :---: | :---: | :---: |
|  | Up to 600 pounds | $\begin{aligned} & 600 \text { to } 1,200 \\ & \text { pounds } \end{aligned}$ | Over 1,200 pounds |
| Loading chute |  |  |  |
| Width, in | 26 | 26 | 26 to 30 |
| Minimum length, ft | 12 | 12 | 12 |
| Maximum rise, in/ft | 3.5 | 3.5 | 3.5 |
| Spacing of 1 -in $\times 2$-in cleats, in | 8 | 8 | 8 |
| Trailer ramp height | 15 | 15 | 15 |
| Pickup truck ramp height | 28 | 28 | 28 |
| Large truck ramp height | 40 | 40 | 40 |
| Tractor-trailer ramp height | 48 | 48 | 48 |
| Double-deck trailer ramp height | 100 | 100 | 100 |

## Loading Chute Dimensions



## UT-BioEng Plan \#5681



## UT-BioEng Plan \#5793 \& 5852




## Two Load Chutes at Different Heights



## Pre-manufactured, Mobile \& Adjustable





## Scales

Make management decisions
Genetic decisions

Marketing

Scales - An I mportant Part of a Working Facility

Do not locate scales where cattle walk across them each time they are worked

Locate offset to the side

Most county cattlemen associations have scales that are available for use by members

## Scales (continued)



Scales Provide I nformation Needed for etermination of Proper Dosing of Medications




Portable Platform Scales


## Moving Cattle Through the System



Cattle Paddles and Brooms Work Well When Moving Cattle


Convenience for you and cattle is most important

Locate adjacent to pastures

- High well-drained site

Source of electricity

## Location of Cattle Handling Facilities

Flooring
Dirt
Grooved concrete

- Sides and Posts

2"x oak lumber in pressure areas (crowding pens and working chutes)
Pipes, guardrails

## Construction Materials



## Animals don't like to be restrained and will be looking for a way to escape.

- Most animals on the farm have a great weight advantage.
- Good handling facilities tilts the advantage back to you.

Points to Ponder When Working Cattle

## Select facility location carefully

Plan thoroughly
Anticipate cattle flow

- Move cattle into chutes slowly and easily
- Curved chute with solid sides

Cattle Handling Reminders

Keep the noise level down

Avoid novelty

- Avoid using whips, sticks and electric prods
- Quick tail twist, instead of shouting or striking
- Handle cattle in groups

Cattle Handling Reminders

## Plan, Plan, Plan

After the Last Nail Is Driven and the Concrete Is Poured, It Is Too Late to Easily Make Changes

- Use the UT-Biosystems Engineering online plans as a starting point

When Constructing or Remodeling a Handling Facility



This Master Beef Producer Program is being partially funded by a grant from the Tennessee Department of Agriculture's Development Fund. Proceeds from this fund are derived solely from the sale of the Tennessee "Ag Tag" specialty license plate.

