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 Increase 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





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.
- 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 Well-Designed Cattle Handling Facility

- 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 Well-Designed 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 Cattle Weights			
	Up to 600 pounds	600 to 1,200 pounds	Over 1,200 pounds	
Space per head, sq ft/hd	14	17	20	
Pen fence height, in	60	60	60	
Post spacing, ft	8	8	8	
Post depth in ground, in	30	30	30	

Holding Pen Dimensions







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 "Jug"

Crowding Pen	Recommended Dimensions for Various Cattle Weights		
(Sweep Tub)	Up to 600	600 to 1,200	Over 1,200
	pounds	pounds	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



A Heavy Gate Will Absorb A Lot Of Shock When An Animal Kicks

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

	D			
	Recommended Dimensions for Various			
Working Chute	Cattle Weights			
	Up to 600	600 to 1,200	Over 1,200	
	pounds	pounds	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	54 to 60	60	60	
cattle, in				
Top rail height-	60 to 72	60 to 72	60 to 72	
temperamental cattle				

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)

Chute Should Hold a Minimum of 3 to 4 Head ۴r


Working Chutes That Are Too Wide Cause Stress for Animals and People



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



Pre-manufactured Curved Chute

Pre-manufactured Double Chute







Position Chute So Cattle Move Toward Light





Keep Area Free of Debris



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 Cattle Weights		
	Up to 600 pounds	600 to 1,200 pounds	Over 1,200 pounds
Holding/squeeze chute		•	
Height, in	45	50	50
Straight sides width, in	18	22	28
V-shaped sides width at bottom, in	6 to 8	8 to 12	14 to 16
Length including head gate, ft	5	5 to 8	5 to 8

Holding/Squeeze Chute Dimensions



UT-BioEng Plan #5778





Stanchion Type Headgate

Chutes With Openings Allowing Access To the Neck Are Desirable



Facilities Must Allow Easy Access To the Neck for Injections to Given According to BQA Guidelines



UNUER

Self-Catch Headgate



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



Gate & Scissor Catch Behind Palp. Cage

Rubber Mat at Headgate Exit

-05



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	600 to 1,200	Over 1,200	
	pounds	pounds	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 x 2-in cleats,	8	8	8	
	4 F			
Irailer 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 #5793 & 5852

Stationary with Steps



Two Load Chutes at Different Heights



Pre-manufactured, Mobile & Adjustable





Shadows Can Slow Loading



Scales
Make management decisions

- Genetic decisions
- Marketing

Scales – An Important 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 Information Needed for etermination of Proper Dosing of Medications

In-Line Permanent





Portable Platform Scales

Certified & Portable

Moving Cattle Through the System



Cattle Paddles and Brooms Work Well When Moving Cattle

Use of Cattle Prods Should Be Kept to a Minimum

- 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

Grooved Concrete Flooring

- 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





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