

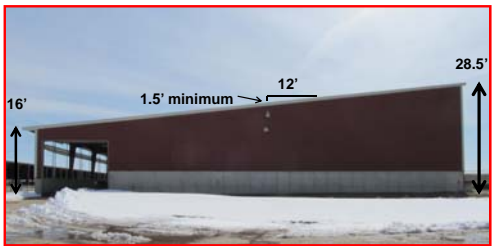
Mono-Slope Beef Barns: Basic Design



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What is a Mono-Slope Barn?



Advantages of a Mono-Slope Barn

- Control manure runoff
- Animal comfort
 - Winter
 - Summer
- Improve performance?
 - Gain
 - Feed efficiency
- Reduce animal sickness
- Value of manure



Value of Manure

Open Feedlot	Mono-Slope Barn
11 lbs Total N/ton x \$0.55 = \$6.05 Total N/ton 14.0 lbs P ₂ O ₅ /ton x \$0.60 = \$8.40 P ₂ O ₅ /ton 17.0 lbs K ₂ O/ton x \$0.50 = \$8.50 K ₂ O/ton \$22.95/ton (5 tons/space/yr) \$115/space/year*	21.7 lbs Total N/ton x \$0.55 = \$11.93 Total N/ton 14.1 lbs P ₂ O ₅ /ton x \$0.60 = \$8.46 P ₂ O ₅ /ton 14.6 lbs K ₂ O/ton x \$0.50 = \$7.30 K ₂ O/ton \$27.69/ton (10 tons/space/yr) \$277/space/year*

Disadvantages of a Mono-Slope Barn


Increased Cleaning		Increased Bedding	
Frequency	% Producers	Bedding	Lb/hd/d
4 times/week	6.7	Average	4.25
3 times/week	6.7	Range	2-10
2 times/week	13.3		
1 time/week	46.7		
Every 2 weeks	26.6		

When a Mono-Slope Excels

- Light-weight calves
 - Muddy
 - Rain and <35°
 - Cold and windy
- Market ready animals
 - Muddy
 - Hot and sunny
- Black-hided cattle
- Dairy steers

Viewing a Mono-Slope Barn

Front View – 28.5' **Back View – 16'**



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Back Needs to Accommodate Equipment



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Orientation of a Mono-Slope Barn

Mostly east-west; seldom north-south





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**Bunk Space Sets Barn Length
Minimum = 12" per Head**

South Bunk	North Bunk
	

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Length of a Mono-Slope Barn

Long	Short
	

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Width of a Mono-Slope Barn



Wide-100'	Medium-64'/Narrow-40'
	

Russ Euken, ISUEO | Russ Euken, ISUEO



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Animal Density

- Solid floor
 - Avg: 40 sq ft/hd
 - Range: 38-50 sq. ft/hd
- Slatted floor
 - Avg: 25 sq ft/hd
 - Range: 22-28 sq ft/hd
- Dependent on animal



Roof of a Mono-Slope Barn

Steel	Insulation
	





Floors of a Mono-Slope Barn





Solid	Slatted
	

Russ Euken, ISUEO




Enhancing the Floors in a Mono-Slope Barn

Scored Solid Floor	Mats for Slatted Floors
	










Back of Building – Split Curtain

- Upper curtain
 - attached 2" below eave
 - Extends down 3'
- Lower curtain
 - Attached below upper curtain
 - Extends to wall
 - Rolls up from bottom (reduces rodent damage)
- Concrete wall is 5' high




Upper Curtain
Lower Curtain










Back of Building – 1-Piece Curtain



- Has an eave vent opening
- Curtain below eave vent
 - One piece attached to center rod
 - Extends simultaneously to wall and eave vent
 - When completely rolled up looks like a long slender tube
- Concrete wall is 5' high



Eave Vent Opening
Center Rod



Raising and Lowering the Curtain

Winched with Roping	Hydraulically Operated
	

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Ventilation in a Mono-Slope

- Set by the opening of the curtain in the back
- Roof may be insulated to control condensation
- Goals:
 - Keep cattle dry
 - Protect from wind
 - BUT still have air movement

	
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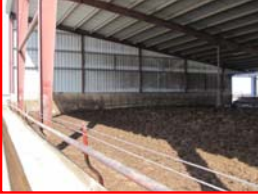

Alleys for a Mono-Slope Barn

North Side	South Side
	

Angie Rieck-Hinz, ISUEO

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Pen Perimeter

Exterior Wall	Interior Wall
	



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Pen Interior

Bunk Apron Wide Enough to Clean	12" Wide Step-Up Keeps Bunk Clean
	

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Bedding Management

Deep-Bedded Pack	Shallow-Bedded Pen
	


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Cleaning a Pen







Types of Bedding



- Cornstalks
 - Most common
- Soybean Stover
- Straw
 - Oat
 - Wheat
- Woodchips



   

Adding Bedding to a Pen










   

Manure Storage





Manure Speed Bump







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Checking Cattle in a Pen


GatedStep-Through




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Gates & Latches





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Feedbunk Styles



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Watering Systems



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Lights



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Working Facilities

Separate	Within the Mono-Slope
	

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Thank You!

