

Morgan County Soil
and Water
Conservation District
10 S. Burke Street
Versailles, MO 65084
573-378-5822 ext. 101

Soil Conservation News

SOIL AND WATER ANNUAL MEETING

Soil and Water Annual Meeting

The Morgan County Soil and Water Conservation District cordially invites you and your family to join us at our Annual Meeting on Tuesday evening March 22, 2016. This years meeting will be held at the Stover Community Center with a meal, provided by the district, being served at 6:30 pm.

Following the meal we will have a presentation by Colleen Meredith, Program Director, of the Soil and Water Conservation Program.

The Cooperator of the Year for 2015 will be named. There will be drawings for door prizes donated by area businesses.

So that we will know how many meals to plan for, please contact our office no later than March 17th with the exact number that will be attending. Please return the bottom portion of the new newsletter or phone 573-378-5822 ext. 101.

If you need accommodation, please contact Patty Wittrock at 573-378-5822 ext. 101 by March 17th, 2016.

From: _____

Please Print Name

_____ Number attending dinner. Please include both adults and children. To participate in the dinner we must have your reservation no later than March 17th.

How Feeding-Site Mud and Temperature Affect Animal Performance

Joel DeRouchev Livestock Specialist, Twig Marston Beef Specialist,
 Joe P. Harner Biological and Agricultural Engineering Specialist

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

The use of temporary feeding sites during winter and early spring to supply feed and/or water to livestock is a common livestock management practice. When selecting a location, producers should be aware of how these sites affect environmental and animal performance. Animal growth performance can be greatly affected by improper site selection and management. This publication highlights issues producers should evaluate when selecting a winter feeding site and describes how these factors affect animal performance.

Effects of Mud on Animal Performance

Winter feeding sites can become muddy quickly when animals are active after moisture falls. Research is clear on the negative effect of muddy conditions on animal performance.

- Bond et al. (1970) reported that mud reduced daily gains of animals by 25 to 37 percent and increased the amount of feed required per pound of gain by 20 to 33 percent.
- The National Research Council (1981) reports that small amounts of mud (4 to 8 inches deep) can reduce feed intake of animals by 5 to 15 percent, while larger amounts of mud (12 to 24 inches deep) can decrease feed intake by up to 15 to 30 percent.
- The University of Nebraska has estimated the effect of mud on animal performance based on temperature conditions in the range of 21 to 39°F. (Table 1)
- Smith (1971) also reported that animals in areas of muddy conditions have an increased need for energy to maintain their maintenance requirement. (Table 2)

Table 1. Risk potential caused by mud, 21 to 39°F.

Mud Depth	Potential Loss of Gain
No mud	0%
Dewclaw deep	7%
Shin Deep	14%
Below hock	21%
Hock deep	28%
Belly deep	35%

Beef Feeder, University of Nebraska, August 1991.

Table 2. Estimated effect of mud on net energy needed for maintenance requirements.

Lot condition	Multiplier for NEm _m
Outside lot with frequent deep mud	1.30
Outside lot, well mounded, bedded during adverse (chill stress) weather	1.10
No mud, shade, good ventilation, no chill stress	1.00

Smith, 1971.

Net Energy for Maintenance.

Effects of Climate on Animal Performance

The relationship between animals and their thermal environments can be described by determining the thermoneutral zone. This is the range in effective ambient temperature where rate and efficiency of performance in animals is maximized. For healthy cattle, this is approximately 23 to 77°F (Hahn, 1999). When the temperature falls below an animal's lower critical temperature or rises above the upper critical temperature, the animal must use more energy to keep warm or cool. Also, as temperatures rise above or fall below the thermoneutral zone, animal bunching may occur, which can reduce or eliminate vegetative cover. A wet hair coat is the most important factor in determining an animal's lower critical temperature. Brownson and Ames (1985) estimate that a steer may experience cold stress at 32°F with a dry winter coat, but this may change to 60°F if the animal's coat is wet. (Table 3)

Table 3. Estimated lower critical temperatures for cattle with varying hair coats.

Hair Coat	Feed Level	Lower Critical Temperature (°F)
Summer coat or wet	Maintenance	60
Fall coat	Maintenance	45
Winter coat	Maintenance	32
Heavy winter coat	Maintenance	19

Brownson and Ames, 1985.

BEEF PRODUCERS WORKSHOP

FREE WORKSHOP

WEDNESDAY, March 16th at 6:00 PM

Hunter Civic Center

(201 W. Jasper St., Versailles, Mo)

***Sponsored by: Morgan County Soil and Water Conservation
Natural Resources Conservation Service
University Extension***

***TOPICS will include "How Feeding Site Mud and Temperature
Affect Animal Performance" by Gene Schmitz
"Comprehensive Nutrient Management Plans" by Mike Morris
"Opportunity's for Cost-Share Assistance"
by Patty Wittrock and Colby Lehman***



Photo by USDA NRCS

Meal will be provided - Please help us know how much food to purchase—RSVP to Morgan County SWCD—573-378-5822 before March 14th.

If you need an accommodation, please call Patty Wittrock at 573-378-5822.

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Weather Protection

Climatic variation is a large component in determining the comfort level of cattle. A seven-year study by Hoffman and Self (1970) reported that cattle given access to shelter during winter months had the following benefits:

- Increased gain by 15 percent.
- Improved feed efficiency by 11 percent.

Summary

Livestock producers should make management decisions to minimize animal exposure to mud and provide protection from adverse weather conditions to maximize animal performance.

References

- Beef Feeder. 1991. A sure cure to sure footing. University of Nebraska Institute of Agriculture. August.
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- Hahn, G. L., 1999. Dynamic responses of cattle to thermal loads. J. Dairy Sci. 82 (Suppl. 2), 10-20.
- Hoffman, M.P. and H. L. Self. 1970. The effect of shelter for feedlot cattle in winter and in summer. Iowa Exp. Sta. Prog. Rep. OEF 70-31.
- National Research Council. 1981. Effect of environment on nutrient requirements of domestic animals. National Academy Press, Washington, DC.
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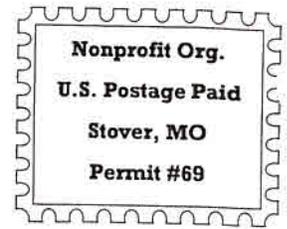
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"Return Service Requested"

Board of Supervisors

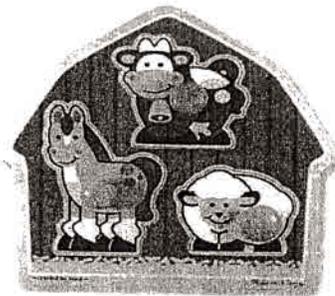
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Women in
Agriculture
March 24, 2016
California High School
California, MO \$15.00

Moniteau County SWCD 573-796-2010

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