

RESEARCH ROUNDUP

Research to apply on the ranch or in the yard

Compiled by Shauna Hermel, editor

Limit-feeding improves efficiency by 35%

Researchers at Kansas State University (K-State) evaluated the performance of 370 crossbred heifers fed either a high-energy diet limit-fed at 2.2% of body weight daily on a dry-matter (DM) basis or a traditional roughage-based diet fed *ad libitum*.

The heifers started the trial at the K-State Beef Stocker Unit weighing an average of 496 pounds (lb.). They were fed once daily at 7 a.m. *Ad libitum* feed refusal was targeted at 20 lb. The cattle were weighed weekly to measure pen body weight, adjust feed offerings and calculate pen performance.

According to the researchers, heifers limit-fed the high-energy diet had 35% better feed efficiency than

Table 1: Performance of newly received growing cattle limit-fed a high-energy vs. a traditional roughage-based growing diet

Item	Diet ¹		SE ²	P-value
	45AL	60LF2.2		
No. of pens	8	8		
No. of animals	186	184		
Body wt., lb.				
Day 0	500.9	503.8	2.65	0.43
Treatment end	757.7	721.6	5.91	<0.01
ADG, ³ lb./day	2.93	2.49	0.07	<0.01
Gain-to-feed ratio, lb./lb.	0.139	0.188	0.01	<0.01
Rumination, minutes/day	455.7	302.8	12.01	<0.01
Activity, minutes/day	346.2	369.5	3.12	<0.01

SOURCE: Kansas State University Cattlemen's Day 2022 Summary Report.

¹45AL = 45 Mcal of net energy for gain (NE_g) per 100 lb. of DM offered for *ad libitum*. DML 60LF2.2 = 60 Mcal of NE_g per 100 lb. of DM limit-fed at 2.2% of body wt. on a DM basis.

²Standard error.

³Average daily gain.

heifers fed the traditional roughage-based diet (see Table 1). They were also more active by 23 minutes.

— K-State Cattlemen's Day 2022 proceedings

MU guide looks at silage pricing

Given current corn and input prices, Ray Massey and Joe Horner say farmers should reconsider long-standing rules of thumb for pricing corn silage.

Drought prompted the Extension economists to update *Pricing Corn Silage*, a University of Missouri (MU) Extension publication that looks at silage costs and revenues. It is available for free download at <https://extension.missouri.edu/g4591>.

Silage — the harvest of corn plants at 60%-70% of whole plant moisture when kernels are at half milk line to black layer — can be made from corn planted for silage or as a grain crop. Silage's value increases in times of drought and

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anticipated reduced grain yields.

Massey says the guide is intended to help farmers estimate the breakeven price to justify harvesting a corn crop as silage rather than grain. The Silage Cost Analyzer (<https://bit.ly/3bjy1dy>), an accompanying Excel® spreadsheet, lets farmers input farm-specific information to estimate breakeven prices.

Typically, farmers price silage using the rule of thumb that silage value per ton is 8-10 times the price of a bushel of corn. A factor of eight to nine is used to price silage in the field; a factor of nine to 10 is used for pricing it in storage. A higher factor is used for lower-priced corn and a lower factor for higher-priced corn.

This rule of thumb needs to be reconsidered in light of current corn and input prices, Massey says. Currently, silage priced in the field may be closer to seven times the price of a bushel of corn.

In addition, the rule of thumb may err in valuing silage because it does not consider the dry matter percentage of the silage, which has a large effect on the value of silage to livestock producers considering the purchase.

The publication also looks at drawbacks of harvesting silage rather than grain. One often overlooked cost of silage is the removal of phosphorus (P) and potassium (K) from the soil. If soils are low in these nutrients, this can be an additional expense. In contrast, silage can be used in intensive manure-spreading areas to purposely remove crop nutrients from soil.

Winter pasture management leads to better grazing-season performance, profit

“Pasture is the cheapest feed resource in a cattle operation,” says Patrick Davis, MU Extension livestock field specialist. Proper pasture management in the late winter and early spring will help optimize forage production during the grazing months and will have a

positive effect on production and profitability, Davis says.

“Cattle producers need to evaluate their pastures,” he says.

Identify pastures that need renovation, and consider using those as sacrifice pastures. Davis urges consultation with an MU Extension agronomy specialist to grade pastures and make decisions on potential pastures that need renovation.

“Move cattle to sacrifice pastures for hay feeding until grass is at proper grazing height,” Davis says.

This helps provide fertility in these areas in the form of manure and hay, which aids in the renovation process. Also, this strategy reduces destruction of good pastures, which could affect their productivity throughout the grazing season.

“Hold cattle off good cool-season grass pastures until proper forage height is achieved,” he says.

At turnout, cool-season pastures should have about 6 inches (in.) of growth. During the grazing season, cool-season pasture heights should range between 4 and 8 in. Davis urges cattle producers to stay within this range during the grazing season to maintain optimum grass growth and quality for optimum cattle performance and productivity.

“Improve pasture forage quality and animal performance by seeding legumes,” he says.

Legumes such as clovers and lespedeza can be drilled now to provide high-quality forage grazing opportunities in the spring and summer months. In addition, they help dilute cattle fescue consumption, reducing fescue toxicosis problems. Legumes are high in calcium (Ca) and magnesium (Mg), which aids in proper cattle mineral balance.

For help in the establishment of legumes, work with your local extension agronomy specialist and consult MU Extension publication G4652, *Seeding Rates, Dates and Depths for Common Missouri Forages*, available for free download at <https://extension.missouri.edu/g4652>. |