

BEEF TIPS



October 1995

Cooperative Extension Service

Kansas State University

KSU Northwest Cow-Calf Conferences Focus on "Reducing Cost of Production and Increasing Value"

Locations:

Russell—

Elks Lodge
8:30 a.m.
November 14

Zurich—

St. Anne
Parish Hall
2:30 p.m.
November 14

Hoxie—

Elks Lodge
8:30 a.m.
November 15

Goodland—

Elks Lodge
2:30 p.m.
November 15

The central theme of "Reducing Cost of Production and Increasing Value" is particularly timely as cow/calf producers work their way through an era of drastically reduced cattle prices. Seminar speakers include Tom Brink from CattleFax who will present the "Profit Puzzle for Cow/Calf Producers" including market outlook, cost of production and calf survey information results. Dan O'Brien, KSU Extension Economist from Northwest Kansas will present "Factors Affecting Cost of Production for Northwest Kansas Cow/Calf Producers," following a trade show break. Dale Blasi, KSU Extension Livestock Specialist for South Central Kansas will focus on "Alternative Beef Cow Supplementation Strategies," including wheat midd and sunflower meal supplementation. Next, Don Adams, University of Nebraska Range Nutritionist from North Platte will share,

"Alternative Calving, Weaning and Grazing Strategies."

After the beef lunch or dinner, Charlie Peters, Director of Commercial Programs for the North American Limousin Foundation, will focus on "Opportunity for Value Based Marketing," alliance formation for increased cattle value. The program will conclude with Larry Corah and Danny Simms, KSU Beef Extension Specialists, addressing "10 Steps to Adding Value" and "10 Steps to Reducing Cost of Production," respectively. These seminars should assist cow/calf producers formulate production and management strategies to increase the value and/or reduce the cost of production of their calves in future years.

*Ron Bolze
Extension Specialist
Livestock Production, NW*

Alternative Beef Cow Supplementation Strategies

Sunflower Meal

This by-product is relatively new to Kansas cow/calf producers as a result of the recent addition of a crusher plant located near Goodland. High oil-containing sunflower seeds are cracked, flaked, steam cooked and mechanically squeezed to remove approximately 70 to 90 percent of the oil content. The remaining "cake" is hexane rinsed to extract an additional 10 to 25 percent of the oil which was not removed during the earlier oil extraction

continued on page 2

LOOK INSIDE FOR COMPLETE PROGRAM

*50 Years
of*

RANGE RESEARCH REVISITED

With a Special Focus on Current Research

RANNELLS FLINT HILLS PRAIRIE RESEARCH AREA

A FIELD DAY YOU WON'T WANT TO MISS!



Alternative Strategies, from page 1

process. The portions of the sunflower seed remaining after the final extraction step (meat, hulls and foreign material) are marketed and sold as sunflower meal.

It is unfortunate no research exists for cow/calf production from which to base recommendations for this by-product. A review of the nutrient content of sunflower meal provides some insight into the nutritional value of this by-product for use as a supplement for beef cows and heifers grazing low quality forage. Generally, sunflower meal is fairly high in crude protein (32 percent) and crude fiber content (25 percent) when evaluated on a dry matter basis. Because of its high fiber and ash level and low crude fat (<1.25 percent) content, the energy value of sunflower meal is lower than soybean meal. From a crude protein perspective, the results of several growing and finishing trials suggest sunflower meal crude protein is of fairly equal value to soybean meal. For these reasons, sunflower meal should be used primarily as a crude protein source. In most cases, no more than 3 to 4 lbs/hd/day of sunflower meal are necessary. If additional weight gain is desired, sunflower meal should be fed in combination with another energy dense feedstuff, such as grain or another alternative feedstuff, such as wheat middlings, corn gluten feed or soybean hulls. Palatability may become an issue, particularly if dramatic changes are made from a familiar supplement to one containing predominately sunflower meal. To circumvent this, it is recommended to gradually increase sunflower meal over a period of time.

The macro and trace mineral content of sunflower meal is fairly high and should be accounted for when determining mineral requirements. Like the other alternative feedstuffs, some additional cost savings are captured by reducing the need for supplemental mineral sources. On a dry matter basis, sunflower meal contains approximately 1.1, 1.95 and .65 percent for phosphorus, potassium and magnesium, respectively; and 33, 43, 1.00 and 123 ppm for copper, manganese, molybdenum and zinc, respectively.

Wheat Middlings

Kansas leads the nation for the quantity of wheat produced and milled into flour in the U.S. (17.3 and 13.4 percent, respectively: 1985-1988). Often referred to as wheat millfeed and wheat mill run, wheat middlings represent a sizable and economically important by-product obtained during the process of milling wheat for flour. During the wheat milling process, approximately 72 to 75 percent of pre-cleaned

wheat becomes white flour, with the remaining 25 to 27 percent fraction as wheat middlings. Kansas flour mills annually produce approximately 800,000 tons of wheat middlings which account for 10 percent of the total amount produced in the U.S.

As a result of focusing extraction efforts on the endosperm fraction, substantially higher levels of crude protein, fat, fiber and mineral result from the concentration of the bran, aleurone cell layer and germ components of the wheat kernel into the wheat middlings fraction. From a human nutrition standpoint, it is a paradox that commercial flour milling methods discard those portions of the wheat kernel (bran, germ, shorts and red dog mill streams) that are richest in proteins, vitamins, lipids and minerals.

Typically, 2.3 bushels of wheat are required to produce 100 pounds of flour, resulting in 38 pounds of wheat by-products consisting primarily of bran, shorts and red dog (wheat middlings represent all wheat by-products combined). In general, bran and shorts each form approximately 40 percent of the wheat middlings produced, while red dog composes the remaining 20 percent. The most important nutritional consideration with wheat middlings is that there exists no practical way for commercial milling operations to produce flour to the buyer's specification(s) and simultaneously produce standardized wheat middlings. Because the miller must fractionate the kernel in a manner that will produce a flour of specific analytical limits and use properties, wheat middlings must ultimately absorb all quality and quantity fluctuations.

Wheat middlings contain approximately 40 to 45 percent neutral detergent fiber (NDF), which is highly digested in the rumen. As indicated earlier, wheat middlings do not elicit the negative impact on fiber digestibility and voluntary intake to the same extent as seen when cows are fed high starch-containing feedstuffs. Sunvold et al. (1990) evaluated mixtures of wheat middlings, soybean meal and grain sorghum formulated to contain 15, 20 and 25 percent crude protein, and fed at the same level, and found dormant forage intake increased quadratically, while NDF digestibility increased linearly with increasing crude protein concentration. They concluded wheat middlings-based crude protein supplements were most effective with dormant bluestem forage when formulated to contain at least 20 percent crude protein. Moreover, Lusby and Wettemann (1988) concluded the lower apparent energy content of wheat middlings compared to corn was offset by beneficial changes in forage intake and/or digestibility that resulted in similar total digestible energy intake.

“From a crude protein perspective, the results of several growing and finishing trials suggest sunflower meal crude protein is of fairly equal value to soybean meal.”

Several trials at Oklahoma State University have evaluated the use of wheat middlings as a source of crude protein and/or energy for fall- and spring-calving cows grazing dormant, native range. In short, Lusby et al. (1991a and b) concluded: (1) wheat middlings protein and energy is well utilized to increase precalving cow weight and could be used to replace soybean meal when the cost per pound of crude protein is favorable; and (2) that 5 to 6 pounds of wheat middlings per day can be used to replace 3 pounds per day of soybean meal. However, if more severe weather conditions exist and/or less forage is available, 5 pounds of wheat middlings may not be adequate. When priced competitively, wheat middlings are an excellent feed ingredient for cows and heifers grazing low quality forages as a supplemental source of crude protein, energy and important minerals.

Dale Blasi

K-State Animal Science Enrollment Reaches New Highs

The 1995 fall animal science undergraduate enrollment reached 753 students. This is up 37 students from 1994 and includes 568 regular animal science students, 34 food science students and 151 pre-vet students advised by animal science staff. This makes KSU one of the largest animal science programs in the U.S. (Animal science undergraduate enrollment: (1) Texas A & M, (2) Kansas State University, (3) Iowa State University, and (4) North Carolina State University.) KSU College of Agriculture enrollment is up 108 undergraduates.

Jack Riley

The
1996 IRM
Red Books
are now
available.

One copy
complimentary
while supply lasts.

Call 913-532-6131.

KSU RANGE FIELD DAY—OCTOBER 27

“50 Years of Range Research Revisited”

RANNELLS FLINT HILLS PRAIRIE RESEARCH AREA

11:30 a.m. *Coffee and Donuts*
12:00 *Opening Comments*
Gerry Posler, Head, Department of Agronomy
12:10 *Rannells Flint Hills Prairie Research Area: Current Focus*
Clenton Owensby, Professor of Range Management
12:35 *Effect of Grazing Season and Implants on Subsequent Feedlot Performance*
Bob Brandt, Hoechst Roussel, Technical Services
1:00 *Move to KSU Range Research Area*
1:30 *Featured Presentations (a riding tour)*
Historical Research Summary, Clenton Owensby, Professor of Range Management
Research Summary, Developing Optimum Supplementation Programs for Range Livestock, Bob Cochran, Associate Professor of Animal Sciences and Industry
Research Summary, Role of Grazing and Fire Management in Grassland Diversity and Production, Dave Hartnett, Range Plant Physiologist, Division of Biology

3:00-4:00 *Concurrent Sessions*
■ Brush and Weed Management on Rangeland, Gary Kilgore, Extension Specialist, Crops/Soils
■ Range Research in Western Kansas, Eric Vanzant, Agricultural Research Center-Hays, Range Scientist
■ New Implant for Grazing Cattle, Gerry Kuhl, Extension Feedlot Specialist
■ Using Wheat Midds as a Range Supplement, Dale Blasi, Extension Specialist, Livestock Production
■ Health Programs: Stockers and Calves, Gerald Stokka, Extension Beef Veterinarian
■ Forage Options, Dale Fjell, Extension Specialist, Crop Production

3:00-4:00 *Exhibits*
Eastern Gamagrass
Current Range Science Research
Current Animal Science Range Research
Kind and Type of Wheat Midds Available
Kansas Forage & Grassland Council
CRP
Forage Options
Actual Forage Display
Equipment to Estimate Forage Availability

**A FIELD
DAY YOU
WILL
WANT TO
ATTEND!**

Location: 2 miles South of Manhattan. Take Deep Creek Road 1 mile East (follow the Field Day signs)

Larry Corah

Kansas Feedlot Performance and Feed Cost Summary*

Gerry Kuhl, Extension Feedlot Specialist, Kansas State University



August, 1995 Closeout Information**

Sex/No.	Final Weight	Avg. Days on Feed	Avg. Daily Gain	Feed/Gain (Dry Basis)	% Death Loss	Avg. Cost of Gain/Cwt.	Projected Cost of Sept.-Placed Cattle
Steers: 27,161	1,283	158 (134-207)	3.27 (2.92-3.54)	6.18 (5.98-6.53)	0.81	\$52.55 (50.47-55.29)	\$57.36 (55.00-60.00)
Heifers: 17,026	1,133	151 (130-169)	2.88 (2.69-3.30)	6.42 (5.98-6.80)	0.84	\$55.56 (53.66-56.11)	\$59.07 (56.00-61.50)

Current Feed Inventory Costs: September 15 Avg. Prices

	Avg. Price	Range	No. Yards
Corn	\$ 3.14/bu	\$ 3.05-3.25	7
Milo	\$ 5.15/cwt	\$ 5.15-5.15	1
Ground Alfalfa Hay	\$93.33/ton	\$78.00-110.00	6

*Appreciation is expressed to these Kansas Feedyards: Brookover Feed Yards, Brookover Ranch Feedyards, Decatur County Feed Yard, Fairleigh Feed Yards, Kearny County Feeders, Pawnee Valley Feeders, and Supreme Feeders.

**Closeout figures are the means of individual feedyard monthly averages and include feed, yardage, processing, medication, death loss and usually sold FOB the feedlot with a 4% pencil shrink. Interest charges are not normally included.



Cooperative Extension Service
 Department of Animal Sciences & Industry
 251 Weber Hall
 Manhattan, Kansas 66506

KSU, County Extension Councils and U.S. Department of Agriculture Cooperating. All educational programs and materials available without discrimination on the basis of color, race, national origin, sex, age, or disability.

Larry Corah
 Extension Beef Specialist
 Kansas State University

Dale Blasi
Dale Blasi
 Extension Specialist
 Livestock Production, SC