

# BEEF TIPS



March 1996

Cooperative Extension Service

Kansas State University

Look inside for information on the  
1996 Roundup at the  
Hays Research Center  
and the  
KSU Southeast Ag Research  
Center Beef Cattle & Forage  
Crops Field Day!

## Steps to Adding Value

*(third in a 5-part series of how we can add value to calves or products produced at a cow-calf operation.)*

### STEP 5. Don't Overlook Alternative Income Sources at the Farm or Ranch

One of the largest cow-calf operations in the United States has focused on reducing cost of production. In addition, they have found there are tremendous alternative sources of income on many farms. Usually, these take some creativity, entrepreneurship, and marketing capabilities, but alternative sources of income can be developed.

A greatly overlooked opportunity in Kansas is lease hunting. Kansas ranches are an excellent source of wildlife. In states such as Texas and Oklahoma, lease hunting has become a very profitable way of adding revenue to an operation. Other operations have looked at options such as bed and breakfasts and dude ranching.

### STEP 6. Look to Alliances for Opportunities

One of the fastest growing concepts in animal agriculture is the concept of alliance or network building. For many cow-calf producers, these are going to offer some excellent opportunities as new ways of marketing their livestock, possibly purchasing needed products at a cheaper price. Keep an open eye on how these alliances might benefit your operation.

Larry Corah, Extension State Leader  
Animal Sciences & Industry

## Ten Steps to Beef Cattle Genetics

### STEP 1 Know what you are

In other words, are you a seedstock producer or are you a commercial producer? Seedstock producers sell genetics, whereas commercial producers buy genetics and sell pounds or a specialty product like replacements. Know what you are so that you can be goal oriented and plan accordingly.

### STEP 2 Know the Basic Principles of Beef Cattle Genetics

An understanding of a few basic principles helps the decision-making process. First, beef cattle production traits are heritable—calves inherit characteristics from their parents. Heritability of 0 percent indicates a trait is not inherited, while a heritability of 100 percent indicates an offspring's performance is completely determined by its parents' performance.

Another basic beef cattle genetic principle is correlation. A correlation measures the relationship between two variables and has a numerical range between -1 to +1. A correlation of +1 is considered "perfect" and indicates that an increase in one variable is associated with a perfectly predictable increase in a second variable. A correlation of -1 is also "perfect," only an increase in the first variable dictates a decrease in the second variable. A correlation of 0 is no correlation, or no relationship. An understanding of genetic correlation allows producers to make genetic progress in one trait with known, directional change in correlated traits.

### STEP 3 Emphasize Trait Selection

Historically, commercial cow-calf producers have singled out one of a few traits that needed improvement within their cowherds and have attempted to improve these traits through their next bull purchases. Little regard has been given to the bigger picture, wherein the entire cowherd must fit through numerous trait windows of acceptability simultaneously.

### STEP 4 Be Goal Oriented

Critically evaluate your current position and where you want to be at some future point in time. Critically evaluate your cowherd and where you want it to be at some future point in time. Critically evaluate the current demand for your product and where you want the demand to be at some future point in time. Think about and write down the steps neces-

*continued on page 2*

sary to achieve your goals. Think about and write down an achievable time frame for achieving the various steps. Constantly reevaluate your goals and steps. Remember, success is a journey, not a destination. It matters not as much where you are as in what direction you are moving. Plan your work and work your plan.

### STEP 5 Reduce Genetic Variation

Too many herds are characterized by excessive ranges in mature cow size, genetic potential for milk production, nutritional requirements, cost of production and managerial constraints. The resulting offspring are anything but uniform and predictable when it comes to feedlot performance and carcass characteristics. This is not a breed issue. This is an individual sire issue. Progressive cow-calf producers, both seedstock and commercial, are seeking out individual sires that show tremendous promise in making valuable genetic contributions to the constraints imposed by the cowherd, feedlot and packing house enterprises. Widespread use of these sires via artificial insemination (AI) has unlimited potential. However, in extensive environments, wherein AI is not practical, the use of full sibling sons of these individual superior sires, produced via embryo transfer of superior cows also with proven track records, would also greatly reduce genetic variation.

### STEP 6 Use Crossbreeding and F1/Hybrid/Composite Bulls Carefully

Significant genetic change can result from selection both between and within breeds. However, breed differences are more easily exploited than genetic variation within breeds because they are more highly heritable. Because of trade-offs resulting from antagonistic genetic relationships within breeds, it is not possible for any one breed to excel in all characteristics of economic importance to beef production. Breeds can be selected to optimize performance levels for economically important traits with a higher level of precision much more quickly than within breed selection. Therefore, use of crossbreeding systems that exploit complementarity by terminal crossing of sire breeds noted for lean tissue growth efficiency, with crossbred cows of small to medium size and optimum milk production, provides an effective means of managing trade-offs resulting from genetic antagonisms.

Individual cowherd productivity is commonly measured by calf weaning weight which can largely be a function of milk production. What is the value of increased weaning weight? Work through this example of steer calves:

	500#	650#
Value per pound	73¢	65¢
Total value	\$365	\$422.50
Difference in Total Value		\$57.50
Value of Additional Weight		\$57.50/150# = 38¢/lb.

### STEP 7 Put Milk Production Into Perspective

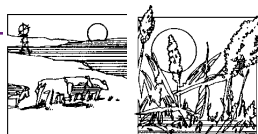
As producers have increased cow size and/or milk production, stocking rates have remained the same. This may have contributed to a gradual decline in range condition over time. Large, heavier milking cows stocked at traditional rates are likely to be in poorer body condition requiring additional higher priced supplementation to maintain the same level of reproductive efficiency over time. Emphasis should shift from average calf weaning weights to, "How many cows can I run on a given forage resource base at what cost?"



#### 1996 Roundup Hays Research Center March 28

Register 3:30-4:00

- Dietary Flushing Using Wheat Middlings for Thin Postpartum Beef Cows
- Effect of Increasing Level of Wheat Middlings on Intake and Utilization of Forage Sorghum Hay
- Comparison of Antibiotic Feed Additives for Stocker Cattle in West-Central Kansas
- Using Urea in Protein Supplements for Cows Consuming Low-quality Forage Sorghum Hay
- Reimplanting Strategies Compliant with Precision Marketing of Feedlot Cattle
- Buying and Selling Feeder Cattle: Pricing Information for Tough Markets
- Practical Antibiotic Therapy



#### KSU Southeast Ag Research Center Beef Cattle & Forage Crops Field Day

May 2—Mound Valley Unit

Registration: 9:00; Program: 9:30

*Morning concludes with a sponsored lunch*

For program details,  
call Lyle Lomas at  
(316) 421-4826.



**STEP****8****Use Genetics to Target a Value Based Carcass Market**

**Targeting the high quality market.** Those producers that target high quality market can make rapid genetic change in their current cowherds through the use of individual, progeny proven, high accuracy Angus (red and black) sires which excel in marbling EPD.

**Targeting the red meat yield target.** According to the 1991 National Beef Quality Audit, most of the lost economic opportunity is due to excessive fat production. Therefore, the most immediate response to reduced fat production can be derived by producers targeting the red meat yield target. The primary focus logically becomes decreased external fat cover, increased REA while at the same time maintaining acceptable levels of quality grade. Numerous entities currently offer pricing structures that reward beef carcasses that excel in red meat yield.

**STEP****9****Maintain Flexibility**

Cow-calf producers cannot be expected to constantly change the genetics of their cowherd with hopes of hitting some carcass specification target which may or may not exist at some point in time in the future. Flexibility appears to be the key. Producers are advised to maintain the kind of cowherd genetics that can shoot for and hit, with some degree of accuracy, which ever carcass target appears economically viable in the short term (two to three years). Producers must become students of beef cattle genetics to find and use the right individual sires, or develop an excellent working relationship with a progressive, forward thinking seedstock producer who does.

**STEP****10****Seek an Alliance With the Right Seedstock Producer**

The right seedstock producer raises cattle the way you do—you have similar philosophies. The right seedstock producer does not just want to sell you bulls. He/she provides additional services, including assistance in merchandising your cattle. The right seedstock producer is responsive to your needs and plans his/her breeding program accordingly. The right seedstock producer may come in various forms with registered purebreds—F1s, hybrids, composites or some combination. The right seedstock producer has probably withstood the test of time. However, do not overlook the younger, aggressive producers that are actively seeking opportunities for alliance formation for increased marketing clout. The right seedstock producer is dedicated to the long term success of your operation and to the sustained future of the beef cattle industry.

**Summary**

It appears that beef cattle genetics will play an increasingly significant role in the profitability of beef production over time, particularly in light of evolving best cost production systems, alliance formations and value-based markets. Greater understanding of beef cattle genetic principles may provide greater insight into the diverse decision making process. (For more details, see Beef Cattle Genetics That Will be Profitable in the Future, Cow-Calf Conference VI Proceedings)

*Ron Bolze,  
Extension Specialist,  
Livestock Production, Northwest*

**Effect of Extreme Cold Weather on Sperm Production**

Fertility checking bulls this year is even more important due to the extreme cold weather. A semen evaluation by your veterinarian can detect the disastrous effects of cold weather on semen quality in your herd bulls. While these effects may be minor, in many cases, they are severe and irreversible. The scrotum of a bull can become supercooled by sub-zero temperatures and high wind speeds. This can result in decreased blood flow to the scrotum and testicles. The outcome of this decrease in blood flow is often scrotal frost bite and temporary or possibly permanent testicular degeneration. Frequently, a scab will form on the end of the scrotum and sometimes this skin will become very inflamed after the insult. In a few months these signs usually resolve, but the result may be that the testicles become adhered to the bottom of the scrotum. This adhesion can greatly effect the bull's semen quality. When the adhesion restricts the movement of the testicle in the scrotum the bull has lost one of the major mechanisms to regulate the temperature of the testicle.

Another source of thermal stress to the sperm is the inflammation that follows a hypothermic incident. Sperm are very sensitive to even slight, 4-5 °C, temperature changes. The most common sperm abnormalities seen due to this type of stress injury are free heads, pyriform heads and bent tails. The abnormal sperm appear approximately 12 days following the insult and peak at 21 to 24 days. The sperm may return to normal in 40 to 50 days after a minor insult, however, in some cases the damage is permanent. Another possible outcome is to see abnormal sperm, predominately bent tails, and with time, a severe depression of the number of sperm ejaculated.

A bull with a high number (greater than 25 percent) of free heads and bent tails should be deferred for classification at a later date. If after a 60-day waiting period the bull continues to ejaculate sperm that are less than 75 percent normal, a guarded prognosis is warranted. Occasionally, bulls will return to normal sperm production in 4 to 6 months. Bulls with one or both testicles adhered to the bottom of the scrotum may have good quality semen but their future as a herd sire is doubtful. These adhesions are sufficient evidence for an unsatisfactory classification.

*Rod Christmas, DVM  
Assistant Professor  
Kansas State University  
College of Veterinary Medicine  
Agricultural Practices—Field Services*

## Kansas Feedlot Performance and Feed Cost Summary\*

Gerry Kuhl, Extension Feedlot Specialist, Kansas State University



### January, 1996 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 Feb.-Placed Cattle
Steers: 16,917	1,277	139 (126-151)	3.39 (3.14-3.86)	6.31 (5.92-6.71)	0.96	\$62.14 (56.81-64.49)	\$68.14 (66.00-70.00)
Heifers: 17,112	1,132	134 (116-155)	3.06 (2.78-3.54)	6.41 (6.02-6.75)	0.68	\$64.76 (59.53-69.38)	\$70.14 (68.00-72.00)

### Current Feed Inventory Costs: February 15 Avg. Prices

	Range	No. Yards
Corn	\$ 3.63-4.00	7
Milo	\$ 6.17-6.17	1
Ground Alfalfa Hay	\$83.00-90.00	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  
 213 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*  
**Larry Corah**

Extension Beef Specialist  
 Kansas State University

*Dale Blasi*  
**Dale Blasi**

Extension Specialist  
 Livestock Production, SC