Cows and supermodels actually have a few things in common. Both groups are judged on their appearance, and their worth is often based on age and weight. In addition, their muscle tone (versus fat) and stance are factors considered by judges. Typically, certain qualities are deemed desirable and will result in monetary gains for the farmers and for the supermodels.

Objectives:

1. Explain how to select beef animals for cow-calf, backgrounding, and finishing operations.
2. Describe beef feed rations for cow-calf, backgrounding, and finishing operations.

Key Terms:

- creep feeding
- culling
- expected progeny differences (EPDs)

Selecting Cattle

Selecting beef animals for the right operation is one of the initial components of each beef system. Producers look for specific qualities, breeds, and sizes when making their decisions.
Cattle evaluation generally should consider the following:

- Main physical points—neck, shoulder, brisket, back, loin, rump, round, pin and hip bones, and hock and pastern
- Muscle characteristics of the loin, forearm, stifle, and width of base
- Fat condition present on the tailhead, loin (top), ribs, brisket, and flank
- Volume and capacity of animal; length of animal, rib shape, and depth of body
- Structural correctness with desirable slope to shoulder and pasterns, all four legs set in at the corners, toes pointed forward, hock square and not bowed in or out; animal stride is long and smooth; the front track should be filled by the back track

COW-CALF SELECTION

A cow-calf producer will evaluate breeding heifers based on structural correctness, volume and capacity, balance and femininity, condition and udder development, muscle, and expected progeny differences (EPDs). Many seedstock cow-calf producers focus on one specific breed. Other cow-calf producers will introduce one or two other breeds for commercial markets. A producer will evaluate bulls on structural correctness, muscle, balance, capacity and condition, testicular size and masculinity, and EPDs.

**Expected Progeny Differences**

Expected progeny differences (EPDs) estimate the genetic value that an animal expresses as well as the potential of passing genetic values to an offspring. An important component in selecting a cow or bull for a cow-calf operation is to analyze the EPDs and pedigree. These records can indicate how the animal performed as a young calf/yearling as well as the genetic lines that may be expressed.

**Culling**

Culling is the practice of removing animals in poor condition or animals that do not express the desirable characteristics of the herd. Heifers that do not breed back after the first
calf may be culled. Poor condition for breeding, age, overall health, the ability to raise a calf, and temperament are other considerations that may result in culling. These practices improve overall performance of the herd by replacing poor-producing animals with young cows that have potential. Culling practices help the operation remain profitable.

**BACKGROUNDING SELECTION**

A backgrounding system will select animals if they do not fit into a feedlot placement, which occurs for several reasons. For example, if an animal is too small or too light, has a compromised immune system, is the proper age and/or breed, or comes from a nonuniform herd, it may be selected. Backgrounding operations will match cattle that are similar in type and kind. These cattle are moved onto a feedlot once standards are met. If backgrounding operations are performed correctly, cattle will perform exceptionally well in a feedlot.

**FINISHING SELECTION**

Finishing operations have two main criteria to consider when selecting animals. Money on gain is the first criteria. These operations will look for big, frame animals that will gain weight. Money on the grid is the second criteria. These operations will select animals with known genetics that will provide specific meat qualities for the final product.

Other considerations measured are the health and the backgrounding or preconditioned program from which the animal came. Feedlot operators are going to evaluate feeder cattle based on muscle, condition (fatness vs. trimness), capacity and frame size, and structural correctness. Operators will also evaluate cattle based on performance traits, such as weight per day of age and feed efficiency. Calm temperament is the final consideration. Cattle with calm temperaments have higher average daily gains than cattle with highly strung temperaments. Certain beef breeds express calmer temperaments than others.

At weaning, feedlot animals are bought at an auction or by a private treaty. Some feedlots will work solely with background operations to guarantee a uniform stock. Producers using custom feedlots have the opportunity to compare and select the feedlots.

**FIGURE 2.** Beef cattle with calm temperaments are desired over cattle with highly strung temperaments.
Beef Feed Rations

Feed rations for beef operations will vary due to the geographic location. Cattle fed in Iowa will have a completely different ration than those grown in Texas. The types of pastures and grain available are different and account for the variability of feed rations.

COW-CALF RATIONS

Cow-calf operations use mainly forages for the feed base. Pastures provide a variety of grasses. In addition, legumes or hay and silage are used as forage. Cattle should have access to a mineral supplement and fresh water daily. Also, feeding programs should have cows and heifers in a moderate body condition at the time of calving. The producer should be able to visually estimate the animal’s condition by the fat over the back and the ribs. Creep feeding, which provides supplemental feed to the calves, is also a component of the feeding program for a cow-calf operation.

BACKGROUNDING RATIONS

Backgrounding operations use a fairly low energy ration in comparison to the finishing diet. Protein levels are from 10.5 to 13 percent crude protein. The expected gains of cattle should be approximately 2 pounds per day. Backgrounding rations will also include hay, silages, corn, corn byproducts, protein sources, mineral and vitamin premixes, growth promotants, and water.

EXPLORING OUR WORLD...

SCIENCE CONNECTION: Expected Progeny Differences

Expected progeny differences (EPDs) are indicators of the genetic worth of an animal. An EPD is going to show a measurement of a specific trait. For example, weaning weight would be shown in pounds. EPDs can help a producer compare two animals of the same breed. When producers need to increase/decrease or maintain a certain trait, they can use EPDs as management and decision-making tools.

EPDs are never perfect. A producer should obtain more information about an animal when comparing traits. EPD numbers can fluctuate; they are not constant. EPDs cannot predict an outcome, and producers cannot use EPDs when comparing different breeds.

Breeds have a set of traits that are used to calculate EPDs. The most common are birth weight, weaning weight, and yearling weight. Some breeds also figure calving ease and carcass traits.
FINISHING RATIONS

Finishing operations will use high-energy rations. Large amounts of concentrated feeds (e.g., corn, milo, and oats) with a small amount of roughage are commonly used. Free choice minerals should be provided, too. Cattle are fed a ration that is approximately 70 to 90 percent grain and must have constant access to water. Cattle in a feedlot facility should expect to gain a pound for every 7 pounds fed. Feedlot cattle should have an average daily gain of 2 pounds or more until they reach harvest weight, which is 1,100 to 1,300 pounds.

Summary:

Selecting beef animals for the right operation is one of the initial components of each beef system. A cow-calf producer will evaluate breeding heifers based on structural correctness, volume and capacity, balance and femininity, and expected progeny differences (EPDs). A backgrounding system will select animals if they are too small or too light for the feedlot. Feedlot operators are going to evaluate feeder cattle based on muscle, condition (fatness vs. trimness), capacity and frame size, and structural correctness. They will also evaluate based on performance traits, such as weight per day of age and feed efficiency.

Feed rations for beef operations will vary due to the geographic location. Cow-calf operations use mainly forages for the feed base. Creep feeding is also a component. Backgrounding operations use a fairly low-energy ration in comparison to the finishing diet, which uses high-energy rations.

Checking Your Knowledge:

1. What is the typical harvest weight?
2. Feedlot operators evaluate cattle on what?
3. How does geographical location affect beef operations?
4. How much weight should a cow gain daily in a backgrounding operation?
5. What are EPDs, and how are they useful?
Expanding Your Knowledge:

Visit a cattle sale barn so you can witness the process of selection. You will learn the value of cows, too (in terms of a dollar amount per head of cattle).

Web Links:

Beef Cattle Selection Handbook

Rations for Finishing Beef Cattle
http://www.gov.mb.ca/agriculture/livestock/beef/aaa05s02.html

Rations for Growing and Finishing Beef Cattle
http://extension.missouri.edu/explore/agguides/ansci/g02066.htm

Agricultural Career Profiles
http://www.mycert.com/career-profiles