

Assessing Management, Resources, and Marketing

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Goal setting is important for many areas of beef production, especially for the breeding program. These goals include reproduction, calf performance, income, herd replacements, cost containment, or a number of others. Breeding management decisions are going to impact each of these goals to varying degrees. For example, the breeding management practice that has the greatest impact on reproduction is crossbreeding; whereas selection is the best management practice for improving carcass quality. Once goals for your beef herd that are important to your family's quality of life are set, it is time to determine which management and breeding practices will be best for your cattle operation. Remember, most management decisions can be changed in an instant, but changes to your herd's genetics generally take time.

Herd Assessment

Once goals have been established, a target has been set; hence, to reach that target, it is important to determine the performance and potential of your current herd. It is very important to have complete and accurate data to determine the production potential of a herd. Data analysis may determine if a herd is performing appropriately for the present level of management or if subtle or drastic genetic changes are in order to meet goals.

Assessing the Herd

Determine Breed Makeup

The first step in assessing a commercial herd is to determine its breed makeup. This will be a reflection of the effectiveness of the crossbreeding program. If you have cows in the herd that are greater than 75% of one breed, then you may consider changes to your breeding program. Further detailed discussion will follow in the crossbreeding section.

Determine Production Level

The next step is to determine the production level of your herd. Accurate and complete records are the only method of determining the production status of a cowherd. Records allow the assessment of the date of calving for reproductive performance (including calving distribution), calving ease score, udder and teat scores, calf vigor, sickness, growth performance, cow weight and condition at weaning, and any other characteristics of importance. Herd data analyzed and summarized can become information needed to make proper management decisions. Without records, the ability of cattle producers to make best management decisions are drastically limited.

Determine Weight and Frame Size

The last step is to determine the average weight and frame size of the cowherd. Frame scores are officially determined by a calculation that includes the age and hip height of the animal. Frame score predicts the expected mature size or finished weight of market calves as shown in Table 1. The predicted mature weights

Table 1. Frame relationship to mature size and carcass weight.

Frame Score	Yearling Hip Height (in)		Expected Weight (lbs)		
	Bulls	Heifers	Mature Cows	Steer Harvest	Steer Carcass
3	45	43	1025	950	600
4	47	45	1100	1050	660
5	49	47	1175	1150	725
6	51	49	1245	1250	785
7	53	51	1320	1350	850
8	55	53	1395	1450	915
9	57	55	1465	1550	975

assume a cow body condition score of 5, and the finished market weight assumes a backfat thickness of 0.4 inches. Knowing the frame size of the cowherd will have an impact on two areas: cow maintenance and carcass weights.

Frame's Effect on Cow Maintenance

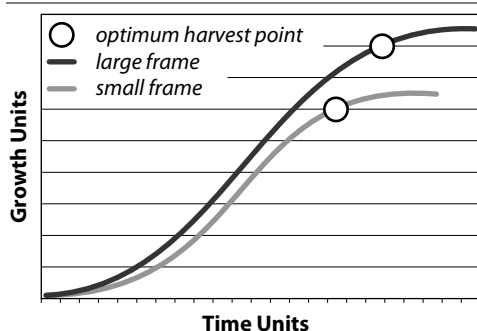
For most commercial cattlemen, cow maintenance costs are the major production cost for the cowherd. Larger-framed cattle weigh more at maturity and therefore have higher maintenance needs. These cattle will need to have additional growth genetics to generate increased income to offset the increased cow feed cost. This cost/return balance is important to determine management systems. For example, if larger feeder calves are desired and replacement heifers are retained, it may result in larger mature cows that will increase feed costs, or if feed resources are not increased, the herd's reproductive performance will suffer.

Frame's Effect on Feedlot Performance and Carcass Weight

The growth and development relationship between large- and small-framed cattle can be observed in Figure 1. The growth patterns of the different types of cattle are similar, and the circle illustrates the optimum finish point for the cattle. Feeding cattle beyond this weight will cause increased cost of production through compromised feed efficiency. Beyond this point the cattle are accumulating more body fat and less muscle. Since it requires more feed (energy) to put on a pound of fat than a pound of muscle, the cattle become less efficient. As a general rule, larger-framed cattle tend to grow at a faster rate when striving to reach their optimum heavier finish weight. Therefore, large-framed cattle require greater amounts of feed and have greater expenses due to longer growing periods in the feedyard; however, heavier finish weights will likely generate more income. As long as discounts from excessive carcass weights or inferior quality grades and yield grades are avoided, producing more pounds of salable product will be advantageous to gross income.

The real problem occurs when cattle of varying frames are fed together to a constant endpoint. The average of the group will meet industry needs, but there may be a large percentage of over- and under-finished cattle in the group. Grouping cattle according to type going into the feedyard or sorting the cattle out as they finish are essential in producing a uniform, acceptable product.

Figure 1. Comparison of growth curves of small- and large-framed cattle.



Differences in Calf Performance When Sired by a Large-Framed Bull or a Moderate-Framed Bull with the Same EPD for Growth: If two bulls have the same genetics for growth but differ in frame, we would expect the larger-framed bull's calves to be taller at weaning and yearling, the finished calves to be heavier and take longer to feed to optimum finish, and the females to be larger as mature cows. However, because the bulls have the same EPD for growth, we would expect the calves to weigh the same at weaning and as yearlings. If large- and moderate-framed calves weigh the same, then the larger-framed calves most likely have less muscling and/or less body capacity. To put this into perspective, visualize two men who weigh 200 pounds each, and each has the same percent body fat. One man is 6 feet 6 inches, and the other is 6 feet tall. The shorter man is likely to have a thicker build with more muscling.

Management Assessment

Management is another component of an operation that should be assessed. In order to properly determine the genetic type of cattle that is needed, it is important to know what resources will be provided and how they impact the performance of the herd. When assessing management, the primary areas of concern are labor, nutrition availability, and feed quality.

Labor

Even on a family-owned and -operated farm or ranch, labor is a consideration when developing a breeding program. Manpower spent per animal will need to be determined. In other words, is labor available over the course of the day to provide assistance when needed, or is labor limited or available on a part-time basis? Knowing this information is necessary to develop a breeding program. As an example, a full-time farmer/rancher who observes the cattle multiple times in a day may not have to pay as much attention to getting a calving ease bull as the part-time farmer/rancher who rarely sees the cattle. Additionally, a full-time farmer/rancher usually has more opportunity to provide additional nutrition during times of distress and can probably manage high-producing cattle more efficiently than a part-time farmer/rancher.

Cow/calf pair on lush pasture in South Carolina.



Photo: Lydia Yon

Cattle taking advantage of crop residue in Iowa.

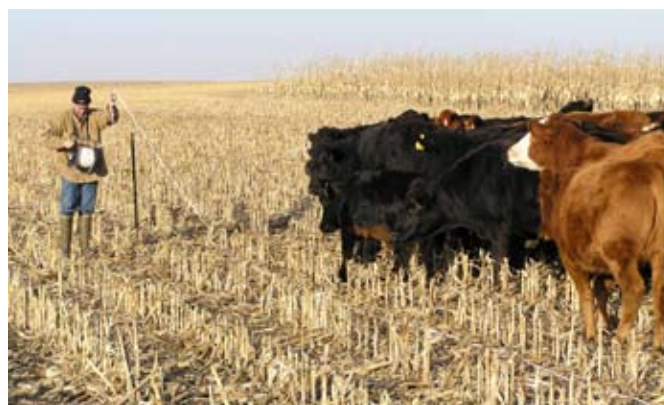


Photo: Daryl Strohhenn

Another labor consideration is the physical capability of the labor. Physical limitations (age, health, handicap, etc.) will require breeding considerations for traits such as calving ease and disposition. Labor availability and capability are important components when determining your breeding program.

Effect of Performance Level and Nutrition Availability

The availability and quality of nutrition are extremely important when determining your breeding program. Cattle will perform as a response to their nutritional plane. Research has shown that under limited nutritional conditions, smaller, less productive cattle are more efficient at converting the available resources into pounds of salable product. Their calves typically weigh less, but they tend to have a greater reproductive rate, which improves the production of the herd. Under ideal nutrition, there were very little efficiency differences between high- and moderately performing cattle. In an environment that provides ample amounts of nutrition, the larger, high-performing cattle were the most efficient at producing pounds of salable product or weaned calves. Based on this information, management operations that provide exceptional nutrition should consider more productive types of cattle; however, operations with poor nutrition, either in availability or quality, should consider less-productive cattle (smaller and/or less milking ability). Quantity and quality of feed resources will be a factor in many management decisions including breeding management.

Feed Quality

Cattle are raised in every part of the United States, and conditions vary drastically. The nutritional resources that are available to cattle are also going to be considerably different depending on location and individual management practices. There are three basic nutritional categories that need to be assessed: the forage base, stored feeds, and purchased feeds.

Forage Base

The forage base assessment deals with determining the quality, quantity, and seasonality of forages that are available. This will include grass type, availability of legumes, and grazing system options (continuous, rotational, etc.). It will also include the availability of crop residues and other regional grazing practices. Because of increased production costs, intensive forage management must sustain a greater level of cattle productivity.

Stored Feeds

The best way to determine the quality of stored feeds is through lab analysis. The major factors that are going to affect that analysis will be species composition, maturity at harvest, harvesting conditions, and storage conditions. Species composition is typically influenced a great deal by the region (subtropical, high desert, fescue belt, etc.), as well as some aspects of harvesting and storage. Arid regions can typically harvest hay under better conditions than areas with large amounts of rainfall. In many regions, the window of opportunity for cutting, drying, baling, and removal is too short to avoid some exposure to rain, which affects quality. Those windows of opportunity also dictate the maturity at harvest.

Purchased Feeds

The assessment of purchased feeds should be based on the availability of economical feedstuffs and is reflected in feed tag information. The decision to purchase feeds is dictated by the deficiencies between the herd requirements and the availability of feed grown by the cattle operation. Regional situations will make certain economical feedstuffs readily available to cattle producers. The decision to purchase feed should always be based on the economic return. In other words, be certain that the cost of purchasing the feed will be offset by generated income.

Marketing Opportunities

The production of beef can be segmented so that multiple ownership of the cattle can happen before it reaches the end consumer. This type of system allows many opportunities for cattlemen, depending on the amount of risk and responsibility they are willing to take. The time of marketing (weaning, pre-conditioned, yearling, finished) and the pricing systems should be seriously considered when developing breeding programs.

The most common opportunities to market cattle intended for meat production are:

1. **Weaned calves sold at auction or by video.** Sellers provide the only production information that is available to potential buyers through the auction center's personnel.
2. **Calves sold off the farm at weaning.** Buyer has direct contact with producer and should be more aware of performance information to varying degrees, breed type, and management information.

Cattle grazing native pastures in Kansas.



Photo: Tim Marshall

3. **Calves sold either at auction or off the farm after a preconditioning period.** This marketing system is only profitable to the seller if the buyer is aware of the preconditioning. Therefore, if sold at auction, it is necessary for the preconditioning information to be provided to potential buyers to obtain price premium.
4. **Yearlings sold after a backgrounding/stocker program through an auction or off the farm.** Buyers generally have little knowledge of the cattle if the cattle have had a previous point of commerce, but yearlings tend to have better health as feeders compared to calves because of advanced age.
5. **Retained ownership through the finishing period.** Fed cattle have the following marketing options:
 - **Sell live as commodity cattle.** Cattle are priced by the average value of cattle compared to other cattle marketed at the same time.
 - **Sell in the meat.** Available options are :
 - *Grade and yield.* Carcasses are valued according to Quality Grade, Yield Grade, and dressing percentage.
 - *Value-based market through a grid or formula.* A precise marketing system that pays premiums for certain carcass traits. Some grids are better suited for high-quality grade cattle, while others are better suited for greater lean meat yield.
 - *Formula marketing.* Cattle that are marketed during the finishing period with a specific future date and delivery point.

Determining the best marketing system for an operation is difficult to determine if information about the production potential of the cattle is limited or nonexistent. Depending on resources and production potentials, differences in marketing options will determine profits. Situations that may cause re-evaluation of cattle marketing plans would be drought or other restrictions to grazing management, market and/or futures prices, alternative feed availability, facilities, ability to manage risk, or others. Although it is important to set goals and have targets, it is also important to be flexible if opportunities or adversities develop.

Summary

Evaluating the resources and opportunities of cattle operations is the first step necessary in selecting breeding stock. Once marketing goals are in place and the capacity and level of production of an operation are established, then a breeding program can be developed. The breeding program of seedstock producers should be to provide customers with cattle that fit their operations and production goals. Marketing highly productive (growth and milk) bulls in an area with limited resources may actually compromise future production. Commercial producers should consider a crossbreeding system to take advantage of heterosis and breed complementarity. After breed selection, cattle producers should then select bulls that match their resources, management, and market opportunities. Targeted selection is a must for efficient production of beef.