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AN218

Considerations for Selecting a Bull[1]

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Introduction

Limited land resources are increasingly putting pressure on beef cattle producers to optimize and even maximize production on a given land resource. Because of limited land access, many cattle ranches are deciding to produce terminal calves and buy pregnant replacement heifers to maintain the cow herd. As a result of this decision, producers need to consider utilizing bulls that will produce calves that will meet industry carcass standards. Opportunities to capture increased value and revenue may be missed if beef cattle producers do not routinely examine their production system with an eye towards improving the uniformity and marketability of the calves they produce. The goal of every cattle rancher should be to generate a profit from their cattle, which means increasing the marketable pounds in the annual calf crop.

Factors to Consider

There are a number of considerations when selecting a bull to purchase. The differential emphasis on any of the following criteria is dependent upon the needs and opportunities that a producer may experience on their individual operations.

1. Structural Soundness

Structural soundness and conformation is an important factor because the bull must be physically able to service cows during breeding. Therefore sound feet and legs, particularly hind legs, are critical for a long service life of the bull.

2. Performance Records/Pedigree

If the bull is purchased through a bull test sale, how well did he perform? What is the performance or record of the bull's siblings or half-siblings? This information can be gathered by examining his pedigree.

3. Expected Progeny Differences

Expected Progeny Differences (EPD) predicts the differences expected in performance of future progeny of two or more sires of the same breed when mated to animals of the same genetic potential. Many cattle producers routinely use EPDs to select sires to meet their production goals. The EPD's that should be considered most highly when selecting a bull to produce terminal calves are calf growth and potential carcass traits. Growth trait EPDs include calf weaning and yearling weight. Carcass trait EPDs that are often considered are carcass weight, backfat thickness, ribeye area, marbling, and retail yield. Carcass traits are important because they are used to determine the value of a carcass. Growth traits are important because in many situations beef cattle producers' revenue is based upon the pounds of calf weaned and marketed or pounds of calf marketed after some extended growth phase. Likewise the ability to produce a calf crop that is capable of garnering a greater price per pound would be an important consideration when purchasing a bull. For beef cattle producers that are retaining ownership, growth traits are important during the post-weaning phase. Similarly carcass traits, primarily carcass weight, but also marbling and yield grade potential are important considerations. When selecting a bull look

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for a breeder that measures carcass traits in his herd and selects cattle with superior growth and carcass traits.

4. Acclimation to the Environment

Find a bull that is acclimated to your ranch's climate and management conditions. Often bulls that are brought to Florida from other states do not tolerate the hot, humid weather and lower-quality forage. The lack of adaptation leads to poor performance of bulls both physically and during the breeding season. Evaluate the need of the bull for additional feed supplemental feed prior to breeding season. However during the off-season they should be able to maintain their condition without additional supplementation. Bull nutrient requirements and feeding recommendations can be found in the EDIS publications Nutritional Management of Bulls http://edis.ifas.ufl.edu/AN211, and Feedstuff Considerations for Feeding Bulls http://edis.ifas.ufl.edu/AN210).

5. Other Selection Considerations

Temperament is also an important trait because it can be a highly heritable trait. Calves should be calm and even tempered so that they will not be concerned with human interaction or equipment in their environment. Nervous cattle become stressed, eat less, are more prone to sickness, and perform poorer.

It is important to consider the cow's mature bodyweight and frame size and the desired calf characteristics when selecting a bull. The bull needs to compliment the cow herd to produce calves with a sensible frame size and still maintain acceptable growth attributes and carcass characteristics.

Breed type is an important consideration for the bull and the resulting mating with the cow herd. One way to produce heavier calves with improved carcass traits is through hybrid vigor. Hybrid vigor is the increased performance or expression of a trait that results from cross-breeding. The F1 (Brahman x Angus) cows mated to a terminal sire-type bull are the most productive cattle breeding programs in terms of cattle reproduction and calf weaning weight (Cross Breeding Systems in Beef Cattle, AN165).

Planning for the Breeding Season

When planning a breeding program it is critical to make sure you have enough bulls to service all of the cows in the herd. An important step is to evaluate the bull's potential to get a cow pregnant. This assessment is accomplished by a breeding soundness evaluation (BSE). A BSE is a quick and relativity inexpensive way of assessing a bulls fertility potential. A BSE should be conducted on a yearly basis by a qualified veterinarian. Bulls should be examined at least 60 days prior to the beginning of the breeding season. This allows for re-testing and replacement of bulls failing the examination. All purchased bulls should have passed a BSE prior to sale.

A BSE consists of four basic steps:

1. Visual assessment of the feet, legs, eyes, teeth and external genitalia;
2. Palpation of the accessory sex glands (prostrate and seminal vesicles);
3. Measurement of the scrotum as well as palpation of the testis and epididymis; and
4. Collection and microscopic evaluation of a semen sample.

If the bull scores very low or fails the BSE, the bull should be re-checked in 60 to 80 days. This time period allows adequate time for the process of new sperm creation, which takes approximately 70 days. A number of issues could cause a bull to fail a BSE including injury to the testes or illness which can cause abnormal or low sperm formation.

In order to know how many bulls a beef producer will need for a breeding season, the service capacity of the bull needs to be considered. Service capacity is the number of cows a bull can adequately detect in estrus and potentially breed during the defined breeding season. The general service capacity or bull to cow ratio is based on the age of the bull. Table 1 provides guidelines for service capacity of bulls.

Table 1. Relationship of bull age to service capacity during the breeding season.

Bull Age	Bull to Cow Ratio
12- 18 months	1:15-20
2 years	1:30-35
3- Aged (7 plus years)	1:35-40

Conclusion

When cattle producers purchase and turn the bull out, they have made one of the largest decisions dictating carcass merit for the subsequent calves. Carcass merit and the genetic change associated with improving carcass merit are not single trait characteristics, so bull selection needs to be made to optimize all growth and carcass merit characteristics. Cattle producers can pursue genetic change for particular carcass characteristics by selecting and utilizing the appropriate genetic sources. Therefore, selecting and

implementing a genetic program with specific goals is important. All management processes performed after the genetic choices are done to optimize the genetic potential of the resulting calf.

References

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