

Bull Selection: Balancing Performance Data and Phenotype

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Introduction

Sire selection is one of the quickest ways for producers to improve (or negatively affect) the genetic component of their operation. Regardless of breed, selecting sires based on available performance data and phenotype is critical to the success of consistent beef production. There are several factors to consider when approaching bull selection:

1. Know your cowherd. What are the goals of the operation? Producers need to have an understanding of their current state of production to select bulls that offer genetic improvement. Are replacement heifers retained or how, when and where are all offspring marketed? These factors influence bull buying decisions.
2. Develop a “job description” for bulls. Most producers #1 task for bulls is to get the cows bred. To do this, bulls must be fertile and sound, both reproductively and structurally. Secondly, bulls should enhance the genetics of the operation. Additional considerations can be how long you plan on using the bull and what feed, facility and labor resources are available.
3. Should I use yearling bulls or older bulls? Yearling bulls offer lower risk of venereal diseases, an additional year of use and a potentially lower initial investment at time of purchase. In contrast, they generally cover less cows than older bulls and require more nutritional management, since they are still growing.
4. Available money for investment. Bulls are an investment to your operation, not an expense. Buy the best quality bull for your price bracket.
5. Where to purchase bulls? Regardless of how the bull is purchased (private treaty or

production sales) it is recommended to purchase seedstock from *reputable* breeders.

Tools Available for Selection

Primary tools that cattlemen have for selection of bulls include the performance data, expected progeny differences (EPDs) and visual appraisal. By knowing what you want out of the bull, you can eliminate the need to evaluate bulls that won't fit your criteria. Performance data that are usually provided include: actual birth weight, 205-day weight, 365-day weight, scrotal circumference. Ultrasound data for ribeye area, marbling and backfat, as well as ancestral information may be provided. Table 1 provides definitions of commonly used EPDs and the units of measurement. It is imperative to remember that EPDs are *only* used to *compare* animals *within a breed*. Expected progeny differences do *not absolutely predict performance*, they merely provide a comparison. For example, if we compare Bull A with a weaning weight EPD of +40 and Bull B with a +30 weaning weight EPD, we can conclude that *on average*, when bred to comparable cows, Bull A's offspring will weigh 10 pounds heavier than Bull B's offspring at weaning.

When visually evaluating bulls, several factors must be considered. First, if a bull is structurally incorrect, his ability to travel to breed cows can be greatly reduced. When evaluating skeletal correctness, start at the topline (see Figure 1). Animals with structural problems will tend not to have level toplines. Bulls with desirable skeletal structure will have moderate slope to the shoulder, hock and pastern to provide flexibility (Figure 2). A structurally correct bull will move with a long, true stride. Some common feet and leg problems are illustrated in Figure 3. Such problems provide

additional stress to the skeletal structure of the animal over time. Secondly, there are some EPDs that aid in muscle evaluation, it is still important to visually evaluate the bull. Muscle indicators are thickness of top and expression of stifle muscle (Figure 2). Volume (internal capacity) needs to be evaluated because deep bodied, high-volume animals tend to be more efficient converters of feed and easier fleshing (maintain moderate body condition). Width through the chest floor, depth of body and spring of rib are indicators of an animal's volume.

Using the Available Tools

Have you ever gone to a sale and been overwhelmed by all the data and bulls available? What can you, as a buyer, do to make your decision easier? First, call ahead of when you plan

to purchase the bulls (whether private treaty or production sale) and get a copy of the performance data and EPDs available. Your selection criteria should be established and you can identify only those bulls that fit your program. When you arrive at the sale/ranch, visually evaluate **only** those bulls that you have pre-selected, this is a more efficient use of your time and resources and avoids the risk of selecting “pretty” bulls whose performance information does NOT fit your situation. The challenging part of balancing performance data and visual appraisal is deciding which to use more heavily in the selection process. This decision comes from experience and a manager's production goals. By sorting through the performance data first, bulls that fit the program are targeted, and then structurally correct bulls can be selected for purchase.

Table 1. Commonly Used EPDs

Acronym	Definition	EPD Units
BW	Birth Weight	Pounds of calf, at birth
WW	Weaning Weight	Pounds of calf, at 205 days
YW	Yearling Weight	Pounds of calf, at 365 days
MILK	Milk	Pounds of calf at weaning due to maternal milk
SC	Scrotal Circumference	Centimeters of scrotal circumference at 12 months of age
TMAT	Total Maternal (Combined maternal, Milk and Growth)	Calculated as ½ of weaning plus all of the milk EPD. Expressed as pounds of calf at weaning.
CW	Carcass Weight	Pounds of carcass weight, indicator of total product
MB	Marbling Score	Amount of marbling, numerical score
REA	Ribeye Area	Square inches of ribeye area
FT	Fat Thickness	Inches of 12 th rib backfat
PRP	Percent Retail Product	Composite EPD that combines hot CW, REA, FT and KPH, expressed in percent

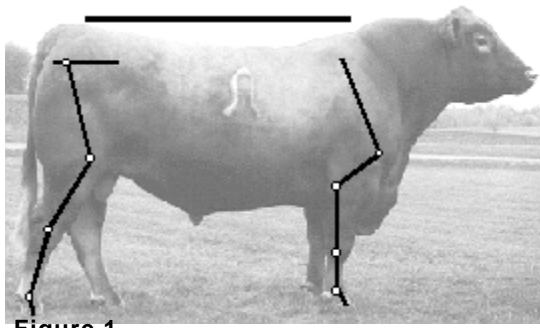


Figure 1

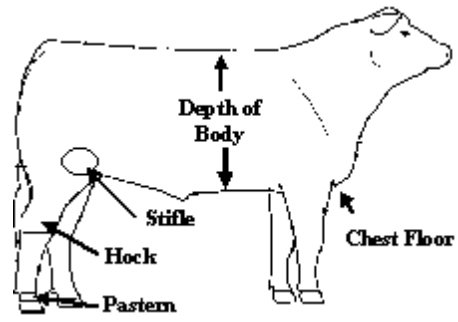


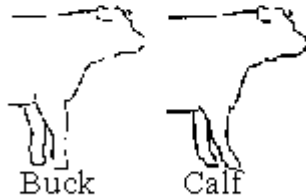
Figure 2



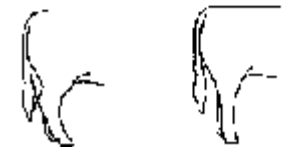
Toed Out Toed In



Hocked In Hocked Out



Buck Kneed Calf Kneed



Sickle Hock Post Leg

Figure 3

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