



# Cattle Producer's Handbook

Reproduction Section

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## Purchasing and Managing Young Bulls

*Jim Keyes, Extension Area Range and Livestock Scientist  
Kerry Rood, Extension Veterinarian  
Utah State University*

### Selection

Before selecting an individual bull, cattle producers should first determine which breed or breeds will influence their cowherd in a positive manner. The choice of breeds should be based on a long-range plan developed by matching breed strengths to a rancher's production goals and ranch resources. For example, is the goal to increase weaning or yearling weights, increase maternal milk, or increase calving ease? The selection then should emphasize those traits most related to the breeding goals. Individual bull comparison should be done within breed. This avoids confusion caused by differences between individual performance and breed characteristics.

The best tool available to evaluate the breeding value of a bull is expected progeny differences (EPDs). More detailed information on EPDs can be found by reading fact sheet 1037. Most breeders can obtain EPD information through their breed associations. For EPDs to be useful, buyers must first determine their production goals.

### Purchasing Young Bulls

In today's livestock industry most bulls are purchased as yearlings. Despite the fact that they are fertile and can breed cows, they are not fully grown or developed. Because of this they require extra management to make sure they achieve their optimum production levels.

### Purchasing Bulls

For decades we have been collecting performance data on bulls, but in earlier times, it was mostly individual performance under feedlot conditions. A ratio would be calculated and potential bull buyers would use those numbers to help make selections.

The problem with this is that the ratio only told you how this bull grew as an individual performing against his pen mates. These numbers said nothing about what

traits, good or bad, would be passed on to his progeny. In fact, his capacity to grow big and score high on feed tests may not have been passed on at all.

A large breakthrough came when computers became available and statistical methods were developed to calculate expected progeny differences. EPDs provide an estimate of the genetic potential of an animal as a parent based upon three sources of information: ancestors, the animal's own record, and the record of its progeny. Because most yearling bulls do not have progeny, their EPDs are limited to their pedigree and their own performance information.

What does an EPD express? An EPD predicts comparable difference in measurable traits within a breed. Assume that one bull has a birth weight EPD of +3.0 and another bull of the same breed has -1.5. This means that, if these bulls were used on genetically equal females managed under equal conditions, the first is predicted to sire calves averaging 4.5 pounds heavier at birth than the other bull (the difference between +3.0 and -1.5). As a producer you are paying for that expected difference in performance.

EPDs are generally calculated by breed associations and are used for all kinds of traits. Some of the early measured traits were birth weight, weaning weight, and yearling weight. Now there is literally a plethora of different EPDs. There is even an EPD that estimates how docile an animal's offspring might be.

The problem with EPDs is that they are data driven. This means the more information the better. Whenever an EPD is listed it is always accompanied by an accuracy value (ACC).

Accuracies are reported as numerical values from 0 to 1. An EPD with accuracy close to 1 most likely represents the true genetic merit of the animal. As the value lessens and gets closer to 0 the EPD is less reliable. An older bull with several generations of calves