

Sire Selection

Fact Sheet 3

Don't Take Any Bull...When Selecting Your Sire By Julie Stitt

It would be encouraging to know the sire you purchase is predictable and will steadily improve the performance of your calves - there should be no "surprises". The Canadian Hereford Association is committed to increasing the predictability of Hereford cattle and has placed a great deal of emphasis on producing quality performance information.

Sire selection is the foundation for building a profitable beef herd. In most herds, bulls are purchased and replacement heifers are selected from within the herd. The sire and dam each contribute 50 percent to the genetic make up of each calf. One-half of a dam's contribution to her calf comes from her sire and one-fourth comes from her dam's sire. Thus, **87 1/2 percent of a calf's genetic material comes from the bulls that were brought into the herd.** Sire selection is the major tool available to producers for changing the genetic potential of their herd.

Sire selection should be based on both subjective and objective assessment. We place great emphasis on our "eye" and judge bulls subjectively for color, size, conformation, stance and walking ability. These are all very important characteristics but we must also keep in mind that eyeballing cannot provide the means of selecting bulls that will sire fast growing calves, low birth weights, easy calving, acceptable carcass traits, acceptable milk production and fertility. A buyer cannot afford to guess which bull being offered by a breeder will perform most predictably and should have objective information at his disposal prior to making a decision.

Objective assessment is achieved by measuring and weighing offspring, parents and ancestors. The information collected includes birth weights, calving ease scores, weaning and yearling weights, height and scrotal circumference measurements. Also, carcass traits such as ribeye, backfat and marbling are now being collected by some producers. **Actual or adjusted measurements** may help in making comparisons between bulls in the

same contemporary group (a group of animals from the same herd, year and season, raised together under the same conditions). Since environmental factors like feed and weather affect weights, actual or adjusted weight can be misleading if bulls come from different contemporary groups. Within a herd, **indexes** help account for some of the environmental differences between contemporary groups. A weaning weight index of 100 means a bull's weight was average in his contemporary group. An index of 110 means a bull's index was 10% heavier than average. Indexes can also be misleading if bulls come from different herds. **EPDs** account for contemporary group and herd differences as well as include information on a bull's relatives as well as his individual performance and progeny performance if available. EPDs are used to compare the predicted progeny performance between two bulls within a breed, regardless of age or herd location.

To assist purebred and commercial producers with making sire selection decisions THE (Total Herd Evaluation) performance data is available on the majority of purebred Hereford cattle in Canada today. The performance information available includes everything from actual weights to nationally evaluated EPDs (Expected Progeny Differences).

Breeders enrolled on the THE performance program will receive adjusted weights and indexes as well as EPDs for birth weight, calving ease, weaning weight, yearling weight, and milk. On bulls with limited information available (i.e. young sires) it is important to consider all performance data (i.e. actual and adjusted weights and indexes) as well as EPDs since EPDs with low accuracy (below 40%) may change substantially from one year to the next. This is especially true for the milk EPD.

In any operation **growth** rate of calves is of obvious importance. However, there are genetic correlations between birth, weaning, yearling and mature weight that should be considered. Selection for high weaning and

yearling EPDs without regard for other traits may result in increased calving and fertility problems and larger cows that require more feed for maintenance. While rate of gain is very important, maximum growth is rarely achieved without sacrificing other important traits. Set reasonable minimum standards for growth and look for bulls that will optimize the traits that are important in your operation

Potential **calving ease** can best be evaluated with **birth weight** EPDs. Birth weights account for the major share of variation in calving difficulty in cows of the same age and size. Because birthweight is influenced to some extent by age of dam and nutrition, actual birth weights should be considered in combination with birth weight EPDs. Through a Farming for the Future research study done with Alberta Agriculture we found that sire EPDs for birth, weaning and yearling weight were positively related to actual progeny performance. Therefore, selection based on these sire EPDs are expected to change progeny performance. It was also interesting to note that the sire EPDs for calving ease were not closely related to the calving ease score (subjective measurement) and therefore, selection based on calving ease EPDs alone would not be recommended. Selecting bulls with low birth weight EPDs is most important when they are to be used on small cows or first calf heifers. A producer must determine the optimum birth weight in his herd and make management and genetic decisions in an effort to reach this goal.

Milk EPDs can be used to assist producers in determining maternal ability within a breed. Milk is not measured directly in beef cattle performance programs. It is measured in terms of how it affects weaning weight. A milk EPD on a bull is an estimate of pounds of calf at weaning produced by the bull's daughter due to her milking ability. For example, Bull A has a milk EPD of +5 and Bull B has a milk EPD of +2. All other things being equal, bull A's daughters should produce calves that wean 3 pounds heavier than those from daughters of bull B due to extra milk production. Until daughter's progeny of a bull come into production the accuracy of milk EPDs are low and therefore, should be used with caution. As a cow's milk production increases, her protein and energy requirements increase. Maximizing milk without supplying adequate feed can result in a decline in conception rate. Producers must decide the desirable range of EPDs that will fit within their feed and forage environment.

The Canadian Hereford Association produces a Sire Summary each Spring which contains Proven, Young and Reference sires. In 1995, for the first time, a Canadian Hereford Sire Summary containing EPDs analyzed jointly with the American Hereford and the American Polled Hereford Associations is available. It is now, not only possible to make valid comparisons of Hereford bulls for specific economic traits in Canada but across the border as well.

A beef operation is highly complex because of the large number of factors affecting it and the high degree of interaction of these factors. For any operation to be profitable cattle selected must be compatible with the environment, market requirements, the breeding system and the management practices in use. Whether bulls are purchased at auction or by private treaty, be sure the information needed to select a sire, which will compliment the strengths and weaknesses of your cow herd, is provided.