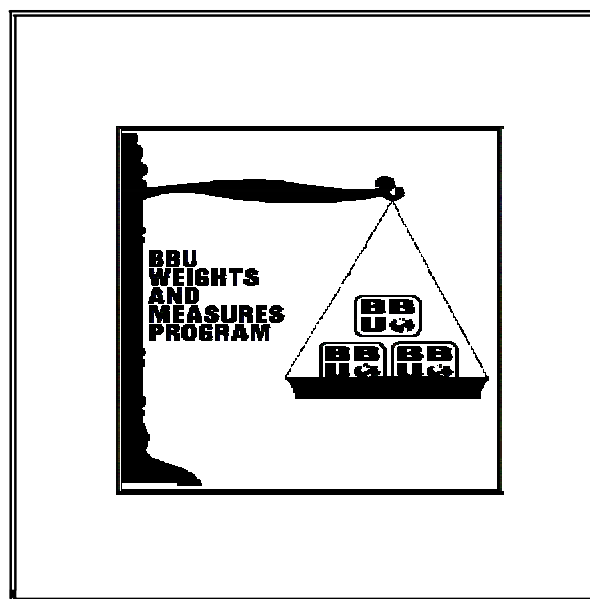


2012



*BEEFMASTER
BREEDERS
UNITED*

*FALL
SIRE
SUMMARY*



2012 Fall Sire Summary

Without question, EPDs are currently the most objective measures of genetic prediction. For decades, beef cattle producers have been able to utilize these values to make sustained genetic progress in many traits of relative economic importance. Across the nation, breeders have been able to achieve more rapid genetic progress through the sharing of scientifically documented genetics. Ultimately, this process has resulted in a more objective description of Beefmaster cattle. Today the opportunities are even greater. The 2012 Fall BBU Sire Summary is available on the BBU website at www.beefmasters.org. The website features a “Sire Selector” option that allows the user to sort sires using multiple trait selection according to personal preferences for each trait.

The BBU Sire Summary been constructed using the most modern and sophisticated methodologies available. The statistical procedures used to calculate the EPDs within this summary have incorporated massive amounts of information on individuals and their relatives. Because of the volume of records utilized to generate EPDs, they are the most objective and informative tools available for genetic selection. The most accurately described individuals are sires with large numbers of progeny performance records. However, research indicates that EPDs computed for young bulls without offspring are still as much as nine times more accurate than performance ratios for use in across herd selection decisions.

For an Active Sire to be published in the sire summary, he must have an accuracy of .60 for weaning weight. Young Sires are bulls under five years of age (born on or after January 1, 2007). Young Sires must have an accuracy of .30 for weaning weight with a minimum of 10 progeny records. All information on all traits for Active and Young Sires has been printed, provided they have met accuracy requirements for weaning weight. Sires that have not had any offspring born in 2010, 2011 or 2012 (and recorded with BBU before August 1, 2012) are considered inactive sires and have been deleted from the Sire Summary. A list of trait leaders has also been included, presenting the top 15 sires for each trait with a minimum accuracy of .60 for that trait and at least 5 records for that trait (on growth traits only). Scrotal and scan trait leaders must have a minimum accuracy of .50 for that trait with no minimum record requirements.

Dr. Brad Crook and his staff at Agricultural Business Research Institute (ABRI) performed the analysis. BBU wishes to thank Dr. Crook and his staff. A special thanks also goes to the BBU Board of Directors for their involvement in this project.

Frequently Asked Questions

Q. My bull is not listed in the Sire Summary. Why not?

A. Only bulls with progeny performance records in BBU Performance Programs are included in the published Sire Summary. However, this does not ensure that a bull will be listed. The analysis is largely based on the relative differences between progeny records of sires within contemporary groups. For this reason, it is important to use more than one sire in your herd. It is also helpful to make semen available on your herd sires and encourage other BBU breeders to use them in their breeding programs.

Q. I did all of that and still don't see my bull in the Sire Summary. Why?

A. In order for any EPD to be included in the Sire Summary, the accuracy for weaning weight must be at least .60 for Active Sires, or .30 for Young Sires. This accuracy value depends on the number of calves a bull has sired, the distribution of those calves in various herds, and the amount of pedigree information available on a bull. (Accuracy values on young sires will increase more dramatically when they are directly tested against proven, high accuracy sires as opposed to other young bulls).

Q. What happens to the EPD information on all of the bulls that did not meet requirements to be included in the Sire Summary?

A. The BBU office has the EPD information for all of the bulls included in the Sire Summary Analysis, as well as EPDs for females and for young bulls that have not yet sired calves. The owners of these cattle may obtain this information by contacting the BBU office and providing the registration number of these individuals or by using the search feature online at www.beefmasters.org.

Q. If a bull has no progeny recorded, how does he have an EPD?

A. The parents of that bull have enough records to generate his EPD for that trait.

Note: The BBU staff, Board of Directors, and Dr. Crook's staff have tried to make sure that the information presented in this sire summary is as accurate as humanly possible. Information like the genetic predictions listed within this summary may be used to enhance mating decisions along with visual evaluation.

For More Information Call BBU at 210-732-3132

Foreword

Brad Crook ABRI, Australia

1. Introduction

This Sire Summary published by Beefmaster Breeders United (BBU) represents part of a comprehensive breed-wide genetic evaluation program available to breeders of Beefmaster cattle. This program provides genetic values in the form of Expected Progeny Differences (EPDs) for all animals – male and female – recorded on the BBU database with performance records of their own or progeny with performance records. This Sire Summary contains bulls which have produced progeny with at least one weaning weight record. EPDs for all other animals included in the evaluation - such as cows with performance progeny or non-parent animals with performance records – are available from the BBU office and via the EPD search facility on the BBU website.

The BBU genetic evaluation calculates EPDs for individual animals using all available pedigree and performance information on the animal as well as its progeny and close relatives. The genetic evaluation takes into account the influence of management, environmental effects and other non-genetic effects as recorded by Beefmaster breeders, to provide the best possible estimate of an animal's genetic value (ie. EPDs) for all traits evaluated.

EPDs are reported for a range of economically important traits including: birth weight, 205-day weight, 365-day weight, maternal growth (milk), scrotal size and four ultra-sound scan traits (rib eye area, rib and rump fat, and intra-muscular fat percent). The trait EPDs reported do not represent the complete list of traits that must be considered during the selection of functional cattle. However, EPDs are the best figures available on the genetic value of animals for these economically important traits. They should be used in conjunction with assessment for structural soundness, fertility, mature size and temperament, among other traits, as part of a systematic and balanced cattle breeding program.

2. The Analysis

The EPDs published in this Sire Summary were produced using version 4.3 of BREEDPLAN genetic evaluation software. This analytical software represents an advanced implementation of Best Linear Unbiased Prediction (BLUP) technology for across-herd genetic evaluation of beef cattle. BREEDPLAN genetic evaluation software was developed by the Animal Genetics and Breeding Unit (AGBU) at the University of New England, Australia^{1, 2}.

This evaluation is based on a wide range of information including the performance of the individual and its relatives for a number of traits, the genetic relationships between the traits and the pedigree links between animals and between herds. All information is combined into one multi-trait genetic evaluation of the Beefmaster breed.

i. The traits included

All performance traits included in the BBU genetic evaluation are adjusted for age of dam and age of calf effects, where such non-genetic effects have been shown to be a significant source of variation in performance for the trait.

Birth Weight

Actual birth weights are adjusted for age of dam effects using multiplicative adjustment factors derived from the BBU data. Birth weight EPDs indicate likely genetic

differences between sires in progeny birth weights, after removing age of dam and contemporary group differences. The lower the birth weight EPD of a sire the lighter is the expected birth weight of his progeny.

Birth weight is of economic importance because it reflects calving ease to some degree, i.e. larger calves at birth tend to result in more difficult births, especially amongst first-calving females. However, whilst low birth weight EPDs may be favoured for calving ease they are also generally associated with lower overall growth potential. Consequently, birth weight and growth need to be carefully balanced. Fortunately, animals can be found that have both moderate birth weight EPDs and above average EPDs for later growth.

205-day (Weaning) Weight

Actual weaning weights are adjusted for age of calf at weighing to a standard age of 205-days, and also adjusted for differences in age of dam, using multiplicative adjustment factors derived from the BBU data. This revised approach to adjusting for age at weighing no longer requires the use of a default birth weight if actual birth weight is unavailable and therefore reduces the risk of any bias that might occur.

The 205-day weight EPDs indicate likely genetic differences between sires in the growth of their progeny to weaning.

205-day Maternal Growth (i.e. Milk)

The BBU genetic evaluation partitions the genetic variation in 205-day weight into direct and maternal genetic components. That is, separating the effects of the genes for growth possessed by the calf itself from the effects of genes possessed by the dam for milking or mothering ability.

The 205-day maternal growth or milk EPD reflects extra calf weight that is due to the genetic influence a sire has on his daughters' milking and mothering ability. These EPDs are reported in pounds of weaning weight. Sires with above average 205-day Milk EPDs are therefore expected to sire daughters with above average milking potential. A sire's 205-day Milk EPD is usually less accurate than its growth EPDs because of the lower heritability of the trait and the time lag before the performance of the daughter's calves becomes available.

A prediction of total contributions of a sire's daughter to calf performance can be obtained by adding one half of the sire's weaning weight EPD to his milk EPD.

365-day (Yearling) Weight

Actual yearling weights are adjusted for age of calf at weighing to a standard age of 365-days, and also adjusted for differences in age of dam, using multiplicative adjustment factors derived from the BBU data.

The 365-day weight EPDs indicate likely genetic differences between sires in progeny growth potential through to market age.

Scrotal Size

Actual scrotal circumference records, in centimeters, are adjusted for age of bull at measurement to a standard age of 365-days, and also adjusted for differences in age of dam, using multiplicative adjustment factors derived from the BBU data.

Scrotal size EPDs indicate likely genetic differences between sires in the fertility of their male progeny, which passes on in part to female relatives. Increased scrotal size is associated with increased fertility in male progeny and with earlier age at puberty of male and female progeny.

