

by Jack Ward

Selecting Predictability

Genomically-enhanced EPDs gives cattlemen more predictability in selecting Hereford genetics.



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THE HEREFORD ADVANTAGE PROGRAM

If you would like to market cattle through the Hereford Advantage program, your current bull battery needs to average 28 for Certified Hereford Beef Index (CHBS). For more information on the new genetic evaluation, please visit the AHA website at Hereford.org. **HW**

The American Hereford Association (AHA) recently implemented a new single-step genetic analysis utilizing BOLT (biometric open language tools) software that incorporates genomics, pedigree and phenotypes directly into the calculations. The biggest difference in this type of single-step method compared to others is that it only uses the most informative markers in the evaluation.

In addition to the new evaluation, the AHA has developed two new traits of economic relevance, Sustained Cow Fertility (SCF) and Dry Matter intake (DMI). These two new traits are vital to profitability for producers as SCF is a true measure of fertility, which is seven to 10 times more important than any of the growth traits, and DMI allows producers to begin to look at the input side, or costs of production.

The evaluation is now fully automated utilizing a gaming computer, which is more robust than a traditional computer. This system allows efficiency, and expected progeny differences (EPDs) are now released each Monday with all information included.

Making reliable decisions

As you sort bulls in catalogs this spring, please keep this tool in mind as we no longer produce interim EPDs. Most

breeders should provide an updated sheet for reference with the current set of EPDs on sale animals.

Many of the animals that you will be considering this spring will be backed with a set of genomically-enhanced EPDs (GE-EPDs), and this information will allow you to select animals with a more reliable set of EPDs.

This data can be especially useful when selecting animals produced through embryo transfer (ET). When a set of ET calves has been genotyped, there can be a fairly significant difference in those calf EPD values, even full siblings. Many commercial cattlemen have been interested in selecting full or three-quarter brothers to provide some consistency in a calf crop. A set of full sibs can be significantly different in their genetic makeup. This difference can be resolved by selecting a set of animals that come with GE-EPDs.

When you combine this more reliable data with disposition, feet and leg structure, pigment, and other traits of interest, you will be able to select a predictable set of bulls.

One question asked periodically is, "How much effect does a genotype have on an animal?" To the right is a table showing the average increase in accuracy when buying a young animal

with a GE-EPD versus an animal without. Similarly, an effective progeny number increase is listed by trait that shows how many progeny equate to a genomic enhancement of a nonparent animal (see Table 1).

The proof gained on a nonparent animal through a GE-EPD would be like adding two to 17 progeny to a pedigree without any additional information. This genomic enhancement makes your buying decisions much more reliable for the traits of interest. **HW**

Table 1: Average increase in accuracy when buying a young animal with a GE-EPD.

AHA trait	Accuracy improvement	Effective progeny number
Calving ease	0.09	17
Birth weight	0.12	8
Weaning weight	0.14	12
Yearling weight	0.16	9
Scrotal circumference	0.17	6
Mature cow weight	0.12	4
Udder suspension	0.17	7
Teat size	0.17	7
Carcass weight	0.11	3
Fat	0.08	2
Ribeye area	0.07	2
Marbling	0.10	3