The Growing (Global) Demand for Hereford

Continued investment in genetic evaluation will build upon the predictions' accuracy and growing demand for the Hereford breed.

by ***Jamie T. Courter, Ph.D.***

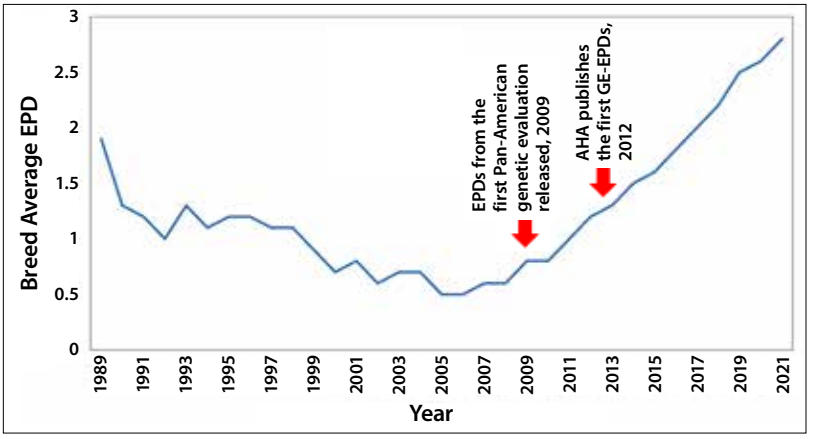
"If you're coasting, you're either losing momentum or else you're headed downhill." – Joan Welsh

It comes as no surprise that the Hereford breed continues to be recognized for traits such as fertility, feed efficiency and docility. These breeding objectives have been the long-standing tradition of every Hereford producer for almost 300 years. With selection so deeply rooted in economically relevant traits, commercial cattlemen recognize the value in purchasing these genetics for their herds.

Knowing the value of Hereford genetics, members of the American Hereford Association (AHA) have continued to market the breed to fellow Hereford breeders and commercial cattlemen. With the commercial bull buyer in mind, AHA invested time and resources into proving the economic advantage of heterosis and crossbreeding. That Hereford advantage comes in the form of statistics such as a 7% increase in pregnancy rates, $20 per head advantage in feed efficiency and even a $30 per head advantage in feedlot profitability.

These numbers and AHA's continued development of tools that help breeders better serve commercial customers contributed to the increase in the global demand for Hereford genetics. The AHA reported a 23% increase in the average sale price of a Hereford bull in 2021 as compared to the average sale price in the previous five years. Shane Bedwell, AHA director of breed improvement, says the 2022-23 sale season so far is "very promising." Furthermore, the number of bulls sold in 2021 was one of the largest ever reported by AHA. But now is not the time to rest on your laurels. How can Hereford breeders continue to drive this trend? In my opinion, it starts with accurate genetic evaluations.

Figure 1: Calving ease direct genetic trend from 1989 to 2021 within AHA genetic evaluation[1].



[1]*https://hereford.org/genetics/breed-improvement/epd-trends/ pulled Jan. 26, 2023*

Ensuring accuracy

First and foremost, investment into the AHA genetic evaluation is paramount. Each bull that leaves your operation is a representation of you as a producer, your brand and the Hereford breed. What better way to add insurance to each animal than ensuring the expected progeny differences (EPDs) used to market that bull are as accurate as possible? There are multiple pieces of information that can help increase the power behind your EPDs, including

genomic profiles, whole herd reporting and phenotypic profiling.

Genomic profiles — There have been several articles written on the value that genomic testing brings to an EPD. The bottom line is that it provides information to the evaluation that would otherwise take years of progeny reporting to know. This accuracy within the prediction allows for confident selection decisions to be made earlier in an animal's life, leading to faster genetic progress. For example, Figure 1 shows the genetic trend, by animal birth year, for Calving Ease Direct (CED) EPD from 1989 to 2021. The increase in genetic gain starting in 2009 and skyrocketing in 2012 makes it obvious that in that time frame new tools became available to help measure genetically what cannot be quantified by the naked eye.

More specifically, given that Hereford cattle are known for maternal traits like fertility, longevity and docility, it becomes even more important to submit DNA samples on females. The power behind any prediction comes from the volume of genotypes with corresponding phenotypes, or data, reported for a given trait. The best way to quantify the pieces of DNA most associated with these traits of interest in females is to submit samples on your cow herd. This helps to train the evaluation and report more accurate estimates of performance.

Whole herd reporting — The genetic evaluation works best when it has a full picture of how the herd is performing. Genomic testing aside, even a producer who submits phenotype information on their whole herd will see the impact of that data reporting in the accuracy of the EPD predictions for that trait. This reporting, combined with genotype information, provides the evaluation with a much better understanding of the relationship among the cattle within a herd as well as within the Hereford breed, even across continents. Having a genotype on file relates cattle to one another based on how much DNA they have in common, not just by their assumed pedigree relationship.

The benefit of genomic relationships to the evaluation improves with increasing numbers of genotypes submitted. Figure 2 shows growing investment in genomic technology in Hereford cattle in the U.S., Canada and Australia as it represents a running total of genotypes submitted to NEOGEN from July of 2012 to December of 2022. To date, AHA has more than 160,000 genotypes incorporated into their genetic evaluation. Specifically, there has been a 32% increase in DNA sample submissions from 2020 to 2022 (Figure 3).

Figure 2: Genomic sample volume for Hereford cattle submitted to NEOGEN Genomics from July 2012 to December 2022 separated by country.

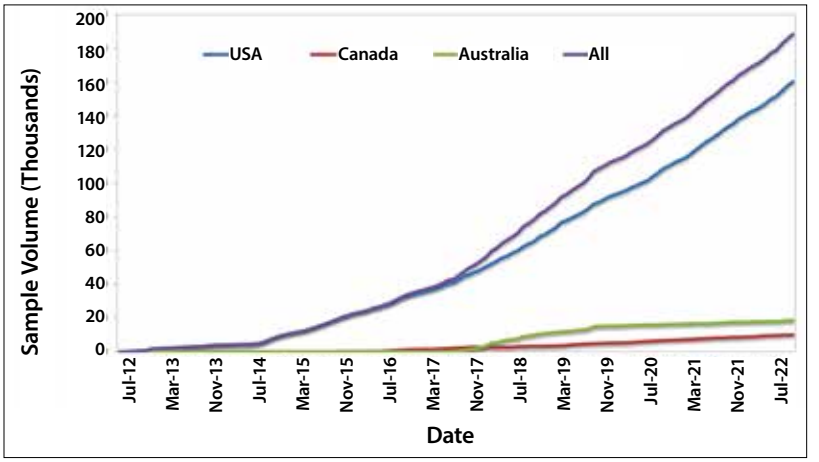
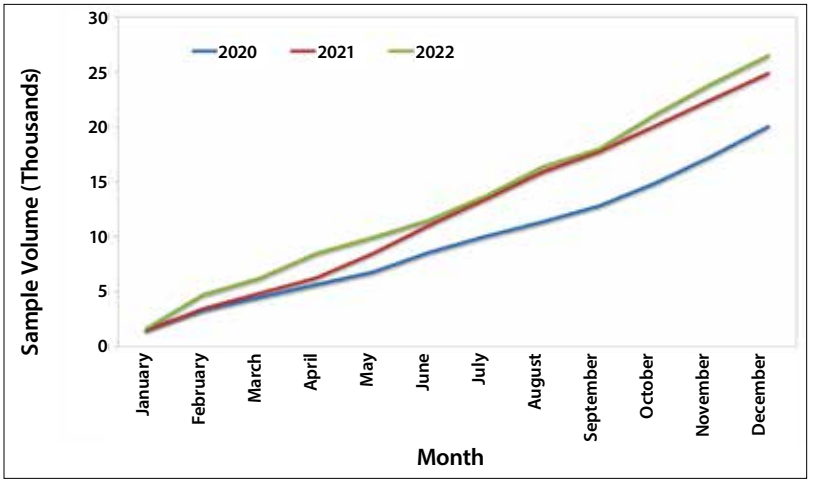


Figure 3: Genomic sample volume submitted per year by the AHA from 2020 to 2022.



Reporting phenotypes — Lastly, and I cannot stress this enough, the power of genomics to the evaluation will never eliminate the need for phenotype reporting. In fact, you could argue that the impact of genomics on an EPD is a direct result of the quality and volume of phenotypes reported for a given trait. Without data behind the predictions, the evaluation would suffer.

In addition to empowering the genetic evaluation to drive the Hereford advantage globally, members of AHA must continue to be committed to breed improvement. You, as members, have arrived at this pinnacle due to vast amounts of hard work and dedication; now is not the time to take your foot off the gas. HW

Editor's note: Jamie T. Courter, Ph.D., is a technical services manager for NEOGEN.