

# Data and Big Decisions in the Beef Business

Good data leads to good decisions.

by *Will Fiske*

**A**gricultural businesses make thousands of decisions per day. Most of these decisions are routine and many are underpinned by data. Decisions that go beyond day-to-day operations have the capability to shift the course of a business and even have a profound impact on an industry. These are known as “big decisions.” These high-value, high-stakes decisions set the course of the business.

In agriculture, specifically the cattle business, a big decision often comes heavily leveraged with financial risk. The outcome of each decision is visited frequently and subjected to circumstances that are out of our control. However, the silver lining to each decision is the fact that a historical chain of events is created, and each event has an associated data value. This data value is essential to improving the outcome of the next big decision, and ultimately, provides a management tool to capture market advantages.

In the production sector of the cattle business, one single mating decision can have an average impact of nearly a decade. How? A mating which results with a replacement female in production will influence the profitability of the cow herd throughout the productive life of that female (average impact of 6 to 10 years). Specifically, the genetics of a replacement female will annually dictate the performance of the female as an individual and her maternal

characteristics as a dam to progeny, and her genetics will determine the available genetic potential to be complemented for the improvement of future progeny. A mating decision is just one example of a big decision that carries an associated level of long-term risk. Risk that can be mitigated by combining generational genomic testing with high-quality phenotypic data; risk that can be reduced with data in the form of genomic-enhanced expected progeny differences (GE-EPDs).

## Data driven

Seedstock breeders and commercial producers have access to data, which is directly linked to significant areas of their operations' profitability. Regardless of whether cattlemen and women choose to embrace it or ignore it, we now live in an age of data-based decisions. When we consider data-based management decisions, the simple questions remain: What is the data worth to you? What cost is associated with collecting the data? How can your operation financially capitalize on data collection on a short-term and long-term basis?

For a Hereford breeder, some of the most important data on their operation is the phenotypic data collected across the animals of their herd. The American Hereford Association's (AHA) genetic evaluation can leverage a tremendous amount of data on numerous traits and measures — so much data that collecting it can seem like a daunting chore. Before getting overwhelmed by



data collection, consider how to integrate practical data collection procedures that are friendly to the daily farming/ranching atmosphere. Based on the available labor of each operation and the responsibilities of individuals involved, the most effective approach to collecting data is a system customized to fit each operation.

### Steps for better data

A systems approach can be broken down into three main areas.

- **1:** The act of physically collecting the data; considering what tools and amount of time are required to collect the highest quality data.
- **2:** The act of recording the data; considering what method will be used to record the data. Will it be handwritten or digital?
- **3:** When will the data be submitted? This can be a two-stage process. When will the

data be uploaded into the farm/ranch's management software to enhance management decisions, and when will the data need to be uploaded to the AHA? This aspect is often overlooked but remains very important. The timeliness of data submission determines when it's incorporated into the genetic evaluation. The most up-to-date EPDs provide the most potential in making big decisions like breeding and selection.

High-quality, phenotypic data matters. Through the integration of performance records and genetic evaluation, Hereford breeders have made significant advancement in improving key performance traits to move the breed forward, while meeting the demands of consumers and the greater beef industry. Generations of high-quality and structured data laid the groundwork for developing and deploying genomic

technology in the Hereford breed. Traditional performance traits will remain economically important, though we can expect the future of cattle breeding to depend on the collection of new data points to influence the big decisions of breeding and selection.

Recent years have witnessed the emergence of numerous unprecedented challenges placing significant pressure on the beef industry. From environmental concerns to shifting consumer preferences and supply chain disruptions, the U.S. beef industry is confronting a complex web of obstacles that require swift attention and innovative solutions. Hereford breeders have a rich history of addressing challenges by designing cattle to adapt, improve and be a vehicle for change. **HW**

**Editor's Note:** Will Fiske is a technical services scientist for NEOGEN.