The data that makes better cows

Katie Schmitt December 11, 2024

Dairy producers are surrounded by data every day. It comes from animals of all ages, in locations across the farmyard, entered into software through automatic systems, and collected by dedicated farm and partner employees. Producers use this data to make breeding, culling, and general management decisions on a cow level. When aggregated within a herd, data helps tell a cohesive management story of an individual operation.

This is where the story of farm data could stop – but in thousands of cases across the country, the data goes further, and our cows are better because of it. Data that leaves the farm destined for the National Cooperator Database fuels genetic improvements in dairy cattle through male and female genetic evaluations, independent research to support new selection traits, and national benchmarking.

Quality in, quality out

It all starts on the dairy farm with accurate animal identification; this holds true when data is used for herd management and for data contributed to the database. Unless information can accurately be linked to an individual animal, it may as well not be collected. Dairy producers who elect to share their data with the national database benefit from an additional layer of data quality certification that benefits the management of the herd today and into the future.

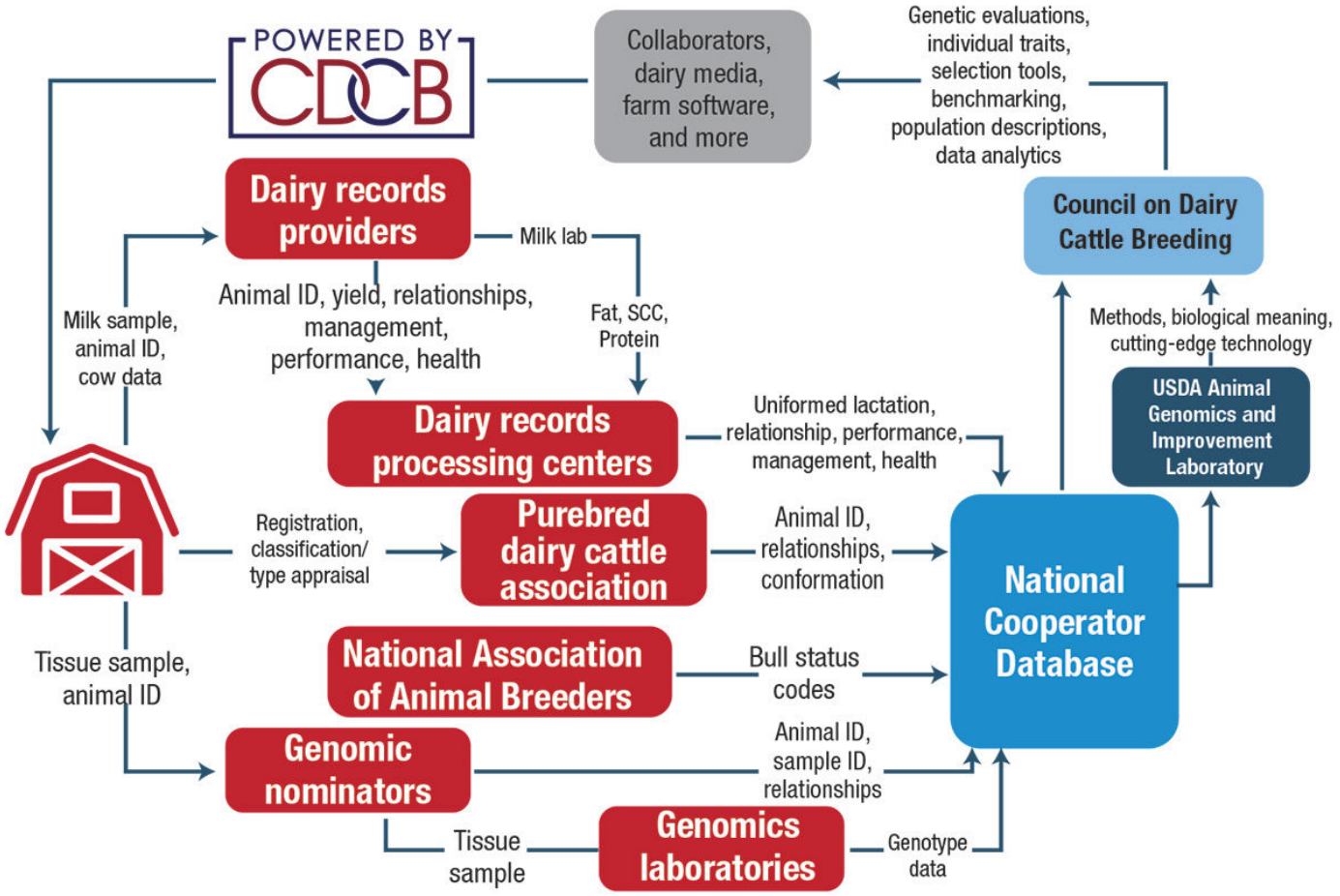
The level of data quality required for reliable genetic evaluations is maintained by certified service providers who assist farms with genomic testing, milk sample collection, data processing, and type classification. Only organizations certified by the Council on Dairy Cattle Breeding (CDCB), Purebred Dairy Cattle Association, and Quality Certification

Services can submit data to the National Cooperator Database. Beyond organizational certifications, individual cow data also must meet data quality standards. Data that does not meet these standards is reported back to the farm, raising awareness of potential data collection issues at the farm level.

Moving millions of records

The National Cooperator Database is the world's largest database of animal genetic and performance data. This past year, the 100 millionth animal linked to phenotypic – or performance – data was recorded in the database, and more than ten million genotypes have been added since the onset of genomic evaluations in 2008.

This level of data sharing is possible through an industry-wide collaboration that starts on the farm and includes more than 60 collaborators. The **infographic** is a depiction of the data flow that fuels genetic evaluations, research, national benchmarks, and in general, genetic improvement.



Announced in October, genetic evaluations and services made possible by this system will now be labeled with "Powered by CDCB." When this mark is shown, dairy farmers and breeders know the genetic information they are utilizing comes from an objective, independent, and pre-competitive source. Importantly, they also know the evaluations are based on data contributed by thousands of herds into the database.

Farm data fuels genetic evaluations

For 15 years, the dairy industry has benefited from the rate of genetic progress made possible by genomic evaluations. Breeders and producers now make sophisticated mating decisions based on knowledge of a bull's genetic potential and the genetic prowess of the individual female.

Genomic evaluations, along with traditional evaluations, are powered by animal performance data – ranging from milk components and reproductive events to conformation scores and health records – stored in the database.

Without a consistent data stream from cows in the U.S. dairy herd, the reliability, or accuracy, of both traditional and genomic evaluations is impacted.

Producers and industry professionals can learn more about the 49 individual genetic selection traits and the merit indexes – Lifetime Net Merit $, Cheese Merit $, Fluid Merit $, and Grazing Merit $ – that are labeled "Powered by CDCB" online.

The bottom line

When the new bull proofs were published on Dec. 3, dairy producers could be confident in the genetic evaluations identified as Powered by CDCB. The genetic results are based on actual cow performance in more than 10,000 dairy herds of all types and sizes from across the U.S. – thanks to the decision of farm owners and managers to share their herd data with the National Cooperator Database. This confidence is rooted in the awareness of the pre-competitive cooperation among organizations serving the industry that fuel the aggregation of data into the genetic evaluations and national herd metrics. Together, dairy producers, the industry at large, and CDCB ensure that accurate data flows into the engine that produces genetic evaluations and fuels valuable resources that create better cows today and into the future.

Key players in dairy data management

- *Dairy records providers* collect on-farm data and milk samples through field service, working with certified milk labs for sample analysis. They are often farmer-owned and regional, and they unite through the Dairy Herd Information (DHI) system for national issues and quality standard.
- *Dairy records processing centers* centralize and specialize in data processing and design software for data collection, lab analysis and herd

management. They deliver data back to farms and industry sectors and transfer data into the National Cooperator Database for genetic evaluations and research.

- The *Purebred Dairy Cattle Association* represents the U.S. breed registry associations that deliver animal identification, ancestry documentation and classification, or type, data for the integrated system.
- The *National Association of Animal Breeders* manages the bull status codes for A.I. and the marketing of U.S. genetics.
- *Genomic nominators and labs* manage the DNA samples, information and genotyping of animals; transfer that data to the National Cooperator Database; and deliver genomic evaluations back to animal owners.