NATIONAL DHIA

National Dairy Herd Information Association

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The value and use

There have been a lot of changes in the dairy production and genetics data systems over the last 10 years. The current review of the U.S. dairy data system for management and genetics has been the focus of the Council on Dairy Cattle Breeding (CDCB) with a Dairy Data Working Group and now a Business Plan Working Group. The current efforts are working to ensure that in the future a sustainable system with data available to make decisions for dairy farms is available.

The building of data systems for data collection from dairy farms has evolved over the past from simple milk, fat and protein records to more detailed management (feeding, breeding, health and fitness) and genetic (linear type, genomics and calving ease) information for dairy farmers. This data collection system is still evolving and needs to deliver information and knowledge to dairy producers, breed associations, AI organizations, herd veterinarians, technical service veterinarians, nutritionists, milk equipment companies and milk cooperatives and processors. The system's scope and effort should take small steps but keep a broad view to leverage the efforts and resources. Meeting the needs and objectives of the data contributors and data users will provide the optimal return to cow-side efforts and then back to allied industry and consumers.

Data services

For more than 100 years, the primary reason for data collection at farms, offered by the DHI system, was to process, analyze and calculate values for turning data into knowledge and management for the dairy herd. About 70 years ago, AI brought the broader use of genetics that relied on production data for calculating genetic values. Linear type data came in the 1980s to bring a genetic component to type values followed by calving ease data. Today, the era of genomics continues the technology adoption for dairy herd management.

Any genetic progress or management practices can only be of benefit on traits that are recorded. It is simple; data needs to be collected to provide knowledge back to make decisions. Focus, direction and gains are only made in the dairy cattle population and production system through data being available and used.

Quality data

Having a system that generates quality and consistent data has helped achieve the current results and more data will be needed in the future. More traits will be identified for collection, along with more detail and results for the current traits collected. Genomics will require more accurate data collection, along with the same amount or greater data quantity to establish the reference population to calibrate the genomic results and keep the reference population current. Otherwise, the genomic predictions will be based on two-plus generations from the current dairy cattle population that is milking.

Current data collection and on-farm systems will need to address the quantity of data capture, quality of data determination and turning data into knowledge back to the

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cow. Genomics will help facilitate this data delivery and will not diminish future data needs. Some misconceptions exist that genomics will replace services such as milk recording and type classification. Genomics, as other technologies before, is an additional tool that helps expand knowledge and not replace knowledge.

Creating sustainable system

Data capture, contribution to the data system and then calculations and results back to the organizations and dairy farmers are being reviewed to ensure a sustainable system for the future. This includes data collection that producers and organizations are currently making to the data flow and the expectation that additional traits will be added in the future, such as health and fitness (i.e. disease resistance, lameness, metabolic diseases and feed efficiency).

The contribution of data flowing into the system will be accounted for and then data and knowledge results flowing back through the system will be provided with recognition (e.g. credits, cash or higher level of access), based on the level and quality of data contribution. Non-contributors of data will have limited or differential pricing for getting knowledge results and values back from the system. It is a simple idea that participants and contributors need to receive value and return on their investment at a different rate than those that only use the results from the system. It is also a critical point that dairy producers need to know and control how and where the data are being used. This will be addressed to have a system that delivers on that message.

Data collection for dairy cattle populations has been significantly impacted by new technology in the past and will continue to be in the future. How the dairy industry adopts and adapts to these technologies has been a tradition from the time of domesticating the dairy cow. Current CDCB efforts are working to continue the tradition and make a sustainable future for dairy farms to provide animal protein to feed the world's increasing population. The production of milk, allocation of resources and feeding a hungry world all need to be balanced in a sustainable manner and driven by decisions based on data. This would be much like a balanced dairy cow that produces quality milk, while also having functional type and optimal feed conversion. Sustainable milk production can happen in many different environments, but it still requires genetic and management data to make it work.

Within these semen straws lies a vast amount of biological material – and a vast amount of data.