Réseau laitier canadien
Canadian Dairy Network

Value of DHI: Today and in the Future

The first official milk recording program in Canada was established in 1904. Over the course of the past century, services provided by DHI agencies have steadily evolved to maximize their value to dairy producers across the country. As with all sectors of the industry the Canadian DHI partners (i.e.: CanWest DHI and Valacta) have been faced with various challenges that have been addressed by proactive strategic planning. Most recent examples of significant service additions include the collection of health events, milk sample analysis for Johne's disease or mastitis-causing bacteria, and various herd management services and reports. Lately, the arrival of DNA genotyping and genomic evaluations have significantly impacted the entire dairy cattle improvement industry, therefore making DHI services even more important than ever.

DHI Enrolment

Official statistics published by Agriculture & Agri-Food Canada (www.dairyinfo.gc.ca) show a 2010 total of 12,965 farms in Canada with milk shipments and a national dairy cattle population of 987,000 cows and 443,100 heifers. In terms of enrolment on DHI milk recording programs, counts for 2010 were 702,764 cows in 9,721 herds. As the number of dairy cows and herds in Canada continues to decline from year to year, a growing percentage of those remaining are on DHI, which is a testimony to the program's proven values of services delivered to producers. In fact, the percentage of herds enrolled on DHI reached 75.0% nationally in 2010, which is a significant 10% gain compared to 65.5% in 1995. Contrary to popular belief, DHI has a greater enrolment market share among larger herds compared to smaller herds. Interestingly, this trend towards increased participation in DHI programs has taken place in parallel with the withdrawal of all federal and most provincial funding support, therefore requiring dairy farmers to pay directly for all services received.

Data Collection

During the past fifteen years, the milk recording sector in Canada has been entirely revamped and streamlined. This process started with the planning and development of a single, national DHI database and data processing system, known as Vision*2000*. During the course of time, significant restructuring also occurred within this sector, ultimately carving today's efficient partnering between CanWest DHI and Valacta within Canadian DHI.

Simultaneous to the structural changes within the DHI sector, much effort has been placed in building effective data collection systems for use in herd management and genetic evaluation. In addition to the longstanding DHI role of collecting calving dates, production yields, component analysis and somatic cell counts, today's services are very broad-based for the benefit of all. Extensive recording of information related to calving

ease, calf survival, milking speed, milking temperament, reproduction, disposal reasons, and health events have become routine services provided to DHI herds across the country. In recent years, DHI has conducted leading-edge research to expand the value of traditional milk samples collected for each cow on test day. Currently, such services include the analysis of Milk Urea Nitrogen (MUN), a DNA-based analysis to identify the presence of mastitis-causing bacteria and a milk ELISA test for managing Johne's disease in the herd. In addition, Canadian DHI partners have plans for introducing more disease surveillance tools using milk samples in the near future.

Herd Management Services

The fundamental reason for data collection services offered by DHI is to process and analyze information for herd management. Producers must first and foremost receive value from the reports and analysis provided by DHI, which must translate into increased profits, in order for producers to voluntarily continue to enrol on DHI and pay for all services rendered. Such reports must be flexible to meet the varying needs of DHI customers regardless of herd size, milking system, housing facilities, or breeding objectives. They must also cover various areas of managing a dairy operation including reproductive performance, herd health, nutrition and feeding, dry cow transition, heifer rearing, replacement rates, cow profitability and genetic selection.

Genetic Evaluation

For decades, DHI has been a vital partner in the area of genetic evaluation, and this remains true today and in the future with genomics. Genetic selection and progress can only be achieved for traits that are recorded. Thanks to existing DHI data collection systems, the Canadian dairy cattle industry has been able to make sire selection decisions and realise genetic gains for many traits including production yields, fat and protein percentages, somatic cell, lactation persistency, longevity, fertility, calving ease, calf survival, milking speed and milking temperament. A common misconception among some people is that genomics will replace the need for traditional data recording systems such as DHI, type classification and herdbook registration. The reality, however, is that genomics will require more accurate and complete collection of data for a wider list of traits in addition to those already being recorded. An excellent example was the 2007 implementation by Canadian DHI partners of a system for recording health events associated with eight key diseases in dairy cattle. Canada has lagged behind some countries in development of genetic evaluations for disease resistance due to the absence of disease recording but is now well-positioned for the future. This recording of health events is expected to allow Canadian Dairy Network (CDN) to evaluate sires for the incidence of mastitis, lameness and various metabolic diseases in their daughters. With genomics, the accuracy of such genetic evaluations will be significantly increased and Canadian dairy producers will benefit by reducing costs associated with disease incidence.

Summary

Canadian dairy producers have access to many excellent services and tools for managing their herds to maximize profitability. A key source of such information is the DHI sector, which includes CanWest DHI for producers in Ontario and the western provinces and Valacta for Québec and the Atlantic provinces. Presently, three-quarters

of all dairy farms in Canada are enrolled on DHI and this percentage been regularly increasing. The herd owners pay for all services received and realise significant returns on this investment. The first step in making accurate management decisions and the first step in making good genetic selection decisions is to record information on individual cows across many herds. For this reason, the DHI sector has been, and will continue to be, a very critical service provider for Canadian dairy producers to be profitable and achieve their specific goals. With the arrival of DNA genotyping and genomic evaluations of males and females, the importance of DHI data collection systems and all traditional breed improvement programs will grow even further!

Author: Brian Van Doormaal, CDN and Holstein Canada
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