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Canadian Dairy Network

Type Classification and Genetic Evaluations in Canada

This article is the first in a series of four which will focus on the type classification system in Canada as well as the calculation, expression and use of genetic evaluations for conformation traits.

Canada is recognized worldwide for the excellence of its type classification program as well as the accuracy and stability of the resulting genetic evaluations. With a breeding goal that combines high production with desirable conformation contributing to increased longevity, the value of type classification in Canada is significant. This first article will focus on the type classification service at the farm level and the value this information has to producers and industry partners.

Type classification programs are offered in all dairy breeds although the Holstein breed service is slightly different compared to the classification service which is common to all other dairy breeds. Table 1 provides general statistics on the number of herd visits and animal classifications in 1999 for each breed. The Holstein breed represents 93.5% of the national activity in type classification and the number of herds participating in the Holstein Canada program has increased by 5 to 6 percent per year for the past three years.

Table 1: Number of Herd Visits and Animal Classifications by Breed in 1999		
Breed	**Herd Visits**	**Classifications**
Holstein	15,096	173,524
Ayrshire	507	6,587
Jersey	359	3,863
Brown Swiss	115	886
Guernsey	37	352
Milking Shorthorn	16	141
Canadienne	15	113
Total	**16,145**	**185,466**

In the Holstein breed there are 17 full-time classifiers who travel across Canada to visit herds at a 7-month interval or "round". At the time of each classification visit, all milking cows in the herd which have not been previously classified must be presented to the classifier. Obviously, in most cases, this only relates to new first lactation females which calved since the previous classifier visit. With the exception of cows which have recently calved and are therefore not in condition for classification, there is no selection or sub-group of the herd classified. Cows which were previously classified have the option of being reclassified if the cow warrants a higher Final Score. In order to score in the highest class of Excellent, the cow must have calved at least three times, therefore being fully matured.

These classification guidelines are similar across all dairy breeds. The Holstein Association of Canada is responsible for the type classification program for that breed and establishes all associated policies and guidelines. The principle adopted by Holstein Canada is that differences amongst young cows are important to identify as is the ability of cows to improve their classification score as they mature and maintain high classification standards with age. Currently in the Holstein breed, each cow is appraised for 24 descriptive traits using a 9-point scale, of which several are measured, plus a series of 39 defective characteristics which are coded as a slight or pronounced tendency. The combination of these ratings

are used to determine an evaluation for seven major traits including Frame/Capacity, Rump, Feet & Legs, Mammary System, Fore Udder, Rear Udder and Dairy Character plus an overall Final Score and Final Class. Table 2 shows the distribution of first lactation, first classifications within each final class category in the Holstein breed during 1999.

Table 2: Distribution of Holstein First Lactation, First Classifications in 1999		
Final Class	**Final Score**	**Percentage of Cows**
Excellent	90 +	Not Applicable
Very Good	85 - 89	1.4%
Good Plus	80 - 84	46.8%
Good	75 - 79	41.1%
Fair	65 - 74	9.4%
Poor	less than 65	1.3%

Classifiers use portable computer equipment to collect the type classification information on each cow at each herd visit. Immediate reports provided to producers include an individual classification report for each cow as well as herd summaries and top lists of proven bulls available in Canada. Most A.I. organizations offer type classification incentives for daughters of their respective young sires so the cost to the producer primarily relates to reclassifications and first classifications of proven sire daughters.

The value of each cow's classification information can be separated into two components, namely, the specific value to her owner and the value at an industry level. To completely appreciate each of these, it is important to understand the variety of ways that the type classification data gets used as shown in Figure 1.
The work of the classifiers at the farm level is a very important source of body conformation information for the industry and the herd owner. Within a day or two after the herd visit, each cow's classification record is processed at Holstein Canada and loaded into its computer database for access by anyone worldwide through its Internet web site. On a weekly basis, all new classifications are electronically forwarded to Canadian Dairy Network for use in genetic evaluations, which are released to the industry and producers every three months, and for regular exchange with other industry organizations such as milk recording and A.I. centres. Milk recording includes the type classification and genetic index information on Production Certificates and individual cow barn cards provided to producers. Participating A.I. organizations receive young sire daughter classifications in return for the type classification financial incentives provided to the herd owner. Immediately following the classification herd visit Semex Alliance, Alta Genetics and St. Jacobs ABC/ABS Canada offer a complimentary genetic mating service which links the value of type classification to mating and genetic selection.

From the producer's perspective, simply by participating in a regular type classification program they receive valuable information for controlling some involuntary culling, for mating their cows to improve weaknesses of the cow and the herd, for marketing the best cows which combine high production and conformation and for identifying their genetically superior cows to use as dams of replacement heifers. In addition, their increased knowledge and awareness of desirable feet & legs, mammary and rump characteristics will help manage their herd in the areas of mobility, udder health and reproductive performance.

There is no doubt of the importance that production performance has on cow profitability. On the other hand, high production for a short period of time would barely cover the costs of raising the heifer in the first place. Superior conformation also affects profitability through reduced involuntary culling and therefore longer productive life as well as higher market value for sale of surplus dairy cows or for sale of breeding stock. The pride and pleasure of working with superior milking cows must also not be overlooked as a source of enthusiasm and of the desire to improve, which ultimately increases profitability as well.