On the Road to an All-Breeds Type Evaluation System

In August 2005, Holstein Canada is scheduled to introduce a new type classification system and provide classification services for all dairy breeds in Canada. This article is the first in an upcoming series that discusses the impact of these changes in field service on the genetic evaluation system for type traits in Canada.

The New Multi-Breed Classification Service

A joint effort involving the seven dairy breed associations will lead to the introduction of a single type classification service for all Canadian producers. With Holstein Canada as the service provider for all dairy breeds, the new system provides several benefits and efficiencies. Due to new technologies including wireless communication, classification results in the barn will be transmitted to the classifier's vehicle for printing reports and then on to head office in Brantford, Ontario, for long-term storage and exchange with industry partners through Canadian Dairy Network. Based on data provided weekly by milk recording, the classifier's handheld computer will be preloaded with identification, pedigree, calving and previous classification information for all cows in the herd, which will avoid re-entry when at the farm.

The new classification system also involves some changes to the specific traits evaluated, especially for the coloured breeds, as well as the assignment of actual scores for the scorecard traits. One of the most obvious changes for all breeds is the combination of Frame/Capacity and Dairy Character into a single scorecard trait, named Dairy Strength. In fact, historical classifications for Holsteins will be changed to create a score for Dairy Strength by combining Frame/Capacity (60%) and Dairy Character (40%) for presentation on official pedigrees and other documents. Related to this change is the addition of Angularity as a descriptive trait and the dropping of Size for all breeds. In addition, only five categories for Final Class will be used for all breeds, namely Excellent (90-97), Very Good (85-89), Good Plus (80-84), Good (70-79) and Fair (60-69), with historical classifications being converted to the new Final Class for consistency.

Impact on Genetic Evaluations

Improvements in the classification service at the farm level require changes to the genetic evaluation calculations. Since the new "Multi-Breed" classification system yields more changes for the coloured breeds compared to Holsteins, the same is true at the genetic evaluation level. Table 1 provides a description of the main changes that will occur as it relates to the publication of bull proofs and cow indexes for type traits in each breed. Behind the scenes there will be several important changes in how genetic evaluations are computed, but these will be discussed in a future article. Basically the genetic evaluation changes will take place in two stages. Firstly, starting with the November 2005 release, new file formats for bulls and cows will be used, reflecting the new list of type traits. For Holsteins, information will be available for all traits at that time but for coloured breeds, genetic evaluations for any new trait will only arrive at the second stage, which will be the May 2006 release.

Table 1: Description of Changes to Genetic Evaluations for Type Traits in Holsteins and Coloured Breeds		
Section	**Holstein**	**Coloured Breeds**
Conformation	• All animals scoring below 60 points are considered equally, instead of all cows scoring below 65 points	• All animals scoring below 60 points are considered equally, instead of all cows scoring below 65 points
Scorecard Traits	• Dairy Strength replaces Frame/Capacity and Dairy Character • Dairy Strength replaces Frame/Capacity in the LPI • Fore Udder and Rear Udder are dropped • Actual scores between 40 and 97 points are used instead of three categories within each of six classes	• Dairy Strength replaces Body Capacity and Dairy Character • Dairy Strength replaces Body Capacity in the LPI • Fore Udder and Rear Udder are dropped • Actual scores between 40 and 97 points are used instead of three categories within each of six classes
Descriptive Traits	• Genetic evaluations for 24 linear type traits for all breeds including 7 measured traits • Size is dropped • Angularity is added • Front Teat Length is changed to Teat Length, which is measured as rear teat length	• Genetic evaluations for 24 linear type traits for all breeds including 7 measured traits • Traits dropped include Size, Style and Head • Thurl Width is changed to Pin Width • New traits include Angularity, Teat Length, Heel Depth, Rear Leg Rear View, Body Depth and Relative Height at Front End
Defective Characteristics	• Current list of 41 in the genetic evaluation system is reduced to 29 for all breeds	• Current list of 62 in the genetic evaluation system is reduced to 29 for all breeds

Summary

The new classification service for all dairy breeds in Canada, to be introduced in late August (Round 72), will surely be a world leading system with many advancements and efficiencies. Producers and industry personnel will have to learn about the new system to understand it and appreciate it to its capacity. At Canadian Dairy Network, the improvements in the classification service will also yield changes in genetic evaluation calculations as well in the bull proofs and cow indexes that are published. A two-staged approach will be used to introduce these changes for all breeds with November 2005 and May 2006 being the critical release dates involved.