

Relating Auxiliary Trait Proofs to Progeny Performance

During the past year or so, various studies at Canadian Dairy Network have concentrated on relating a bull's proof for a specific trait to the expected average performance of his daughters. Previous articles reported this relationship for milk, fat and protein yields, somatic cell score as well as various type traits so the next logical step was to look at some auxiliary traits, namely milking temperament, milking speed and calving ease.

Milking Temperament

Official bull proofs for milking temperament were introduced in August 2001 for all dairy breeds based on subjective appraisals for each first lactation cows that are provided by producers to their milk recording representative. Each cow is evaluated as either "Very Nervous", "Nervous", "Average", "Calm" or "Very Calm". Within each herd it is important to properly identify the differences for milking temperament amongst the first lactation cows by using the full range of the reporting scale.

In terms of official bull proofs, the published value represents the percentage of daughters that are expected to be rated as "Average", "Calm" or "Very Calm". Based on the fact that about 10 percent of the cows in each breed are recorded as "Nervous" or "Very Nervous", the average bull proof is therefore 90% (Table 1).

Table 1: Interpretation and Scale for Auxiliary Trait Holstein Bull Proofs				
Trait	Interpretation	Breed Average	Lowest Proofs	Highest Proofs
Milking Temperament	% of 1 st lactation daughters expected to be "Average", "Calm" or "Very Calm"	90%	<80%	>95%
Milking Speed	% of 1 st lactation daughters expected to be "Average" or "Fast"	85%	<70%	>95%
Calving Ease	Expected % of a bull's progeny born from first lactation calvings without any assistance	85%	<70%	>95%
Maternal Calving Ease	Expected % of a bull's daughters giving birth to their first calf without any assistance	85%	<70%	>95%

Milking Speed

Following a recent CDN analysis showing the relationship between the published bull proofs for milking speed and the expected appraisal of their daughters, the Genetic Evaluation Board determined that the bull proof average needed to be changed to be 85 percent instead of 69 for all breeds, effective February 2003. This decision was based on the fact that 85 percent of the first lactation cows in each breed are being rated as “Average” or “Fast” with two percent being in each of the extreme categories of “Very Slow” or “Very Fast” and the remaining 11 percent are rated as “Slow”. This change in the average bull proof also reduces the chance of confusion across traits since calving ease proofs also have a breed average of 85 percent in Holsteins (Table 1).

Calving Ease

For several years now, milk-recording representatives have collected calving ease information based on the producer’s evaluation of each calving on the farm using a subjective scale with an appraisal of either “Unassisted or Unobserved”, “Easy Pull”, “Hard Pull” or “Surgery Required”. This data has been used at CDN to calculate two ratings for each bull in the Holstein breed and starting in February 2003 the Ayrshire and Jersey breeds will have official calving ease proofs as well.

The most common evaluation provided for each bull is the proof for “Calving Ease” but CDN also provides a rating for “Maternal Calving Ease”. Basically the “Calving Ease” proof reflects the bull’s potential as the sire of the calf (ie: how easily his progeny are born) while “Maternal Calving Ease” proofs represent the bull’s ability as a maternal grandsire (ie: how easily his daughters give birth). For both traits, the average proof for Holstein bulls is 85 percent, which reflects the average percentage of unassisted births that is expected when the bull is bred to heifers. Following a recent CDN analysis comparing the calving ease proofs to the actual progeny performance, the Genetic Evaluation Board determined that the range in bull proofs should be doubled, starting in February 2003, so that the proper scale of proof expression is used. As shown in Table 1, the average and range in Holstein proofs for milking speed and both calving ease traits will now be the same so interpretation across traits is also improved.

Summary

Bull proofs for milking temperament, milking speed, calving ease and maternal calving ease are available for Holstein bulls with sufficient progeny information. The method used to express the bull proofs for these traits is designed to directly reflect the expected performance of future daughters in accordance with the scale used to collect the data at the farm level. The recent decisions of the Genetic Evaluation Board, based on analysis conducted at CDN, are expected to improve the understanding of the published proofs and better reflect the true differences between sires. Effective February 2003, the average milking speed proof will be increased to 85 percent, which is the same average as for calving ease traits, and the proof scale for calving ease will be expanded to more accurately reflect the expected differences between sires.