

7 April 2020

Have you taken the time to look at the latest genetic evaluations?

In Canada, the April release of genetic evaluations coincides with an update to the genetic bases used to calculate them. This base change must be taken into account when interpreting the published genetic indexes. This yearly adjustment redefines the genetic base to which all animals are compared, resulting in changes for a number of traits in each breed, and thus underlining genetic improvement to the breed. As an example, let's consider a bull that had a proof of 3000 kg Milk in the December 2019 release. As for all animals, the April 2020 proof for this bull is adjusted downward by 99 points for milk to reflect the base change. If the new proof for this bull is 2925 kg Milk, the total difference is not solely attributable to new data included in his proof. If not for the 99-kg base change, this bull's proof would have increased by 24 kg compared to the previous run.

It is also important to understand that this adjustment is done differently in the United States. The American genetic base definition changed this year as well, but the U.S. base is only adjusted every five years. We can thus expect to see more significant changes in the U.S. this year than in Canada, where the base is adjusted annually. Moreover, the base definition used in the U.S. differs from the one used in Canada. As a result, bull indexes in the U.S. remain more constant over the five-year period, but ranking within breeds becomes more difficult from year to year because the breeds improve over time.

Below is a table taken from the article "Base Change Summary", published in March 2020 on the Canadian Dairy Network site (cdn.ca):

The table below indicates the amount of base change realized in 2020 compared to 2019 for each trait and breed. For LPI, the following base adjustments reflect the change to the new scale with half the variance compared to previous years.

Base Changes for 2020 Versus 2019

	AY	BS	CN	GU	HO	JE	MS
LPI ¹	0	0	0	0	0	0	0
Milk (kg)	64	23	-37	38	99	68	3
Fat (kg)	2.7	0.9	-1.7	1.0	5.1	4.2	0.4
Protein (kg)	2.4	1.3	-1.2	1.3	4.3	2.9	0.1
Conformation	0.64	0.34	0.37	0.12	1.03	0.40	0.26
Mammary System	0.63	0.27	0.31	0.17	0.95	0.38	0.26
Feet & Legs	0.49	0.42	0.08	-0.08	0.81	0.19	0.13
Dairy Strength	0.34	0.30	0.32	0.01	0.49	0.25	0.25
Rump	0.23	0.13	0.17	0.09	0.29	0.22	0.03
Herd Life ²	0.43	0.53	0.15	0.05	0.75	0.26	-0.18
Somatic Cell Score ²	0.33	0.26	0.34	0.16	0.62	0.33	0.02
Daughter Fertility ²	-0.08	0.08	0.00	0.18	0.47	0.15	0.03

¹ – Base change for LPI is set to zero since it is already reflected by the change in the "Constant" included in the LPI formula.
² – Traits expressed on scale of Relative Breeding Values (RBV).

Holstein Québec

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For those who would like to know more about base changes in American evaluations, here is the link to a more in-depth article on the subject, published by the *Council on Dairy Cattle Breeding (CDCB)*:

https://www.uscdcb.com/wp-content/uploads/2020/02/Norman-et-al-Genetic-Base-Change-April-2020-FINAL_new.pdf

Please don't hesitate to contact your Holstein advisor if you have any questions on the matter. We will be happy to help you understand these changes.

The Holstein Québec Advisory Services Team