



Subclinical Ketosis Evaluations for Smaller Population Dairy Breeds

• November 25, 2025

Starting December 2025, Brown Swiss, Canadienne, Guernsey, and Milking Shorthorn breeders will have access to genetic evaluations for Subclinical Ketosis. Lactanet has offered Metabolic Disease Resistance (MDR) evaluations since 2016 for Holstein, Ayrshire and Jersey breeds, covering Subclinical Ketosis, Clinical Ketosis and Displaced Abomasum traits. At that time, data for the other breeds was limited, however, years of accumulating milk BHB data has changed that.

The Data

Subclinical ketosis occurs when ketone levels rise in the bloodstream in early lactation due to a negative energy balance. It can lead to other metabolic diseases, impaired immunity, reduced milk yield, and poor reproductive performance. Unlike clinical ketosis, subclinical ketosis

often goes undetected without monitoring programs such as Lactanet's KETOLAB service.

Genetic evaluations for Subclinical Ketosis rely on milk BHB (i.e.: milk beta-hydroxybutyrate) levels analyzed from every milk recording sample. This data has steadily accumulated, paving way for the future expansion of MDR evaluations for the smaller population dairy breeds. There are now around 7,000 first-lactation records and over 13,000 later lactation records for the Brown Swiss breed. For each of the Canadienne, Guernsey, and Milking Shorthorn breeds there are roughly 1,300 and 3,000 records for first lactation and later lactations, respectively. Data for clinical ketosis and displaced abomasum remains limited, so genetic evaluations for these traits are not yet possible for these breeds.

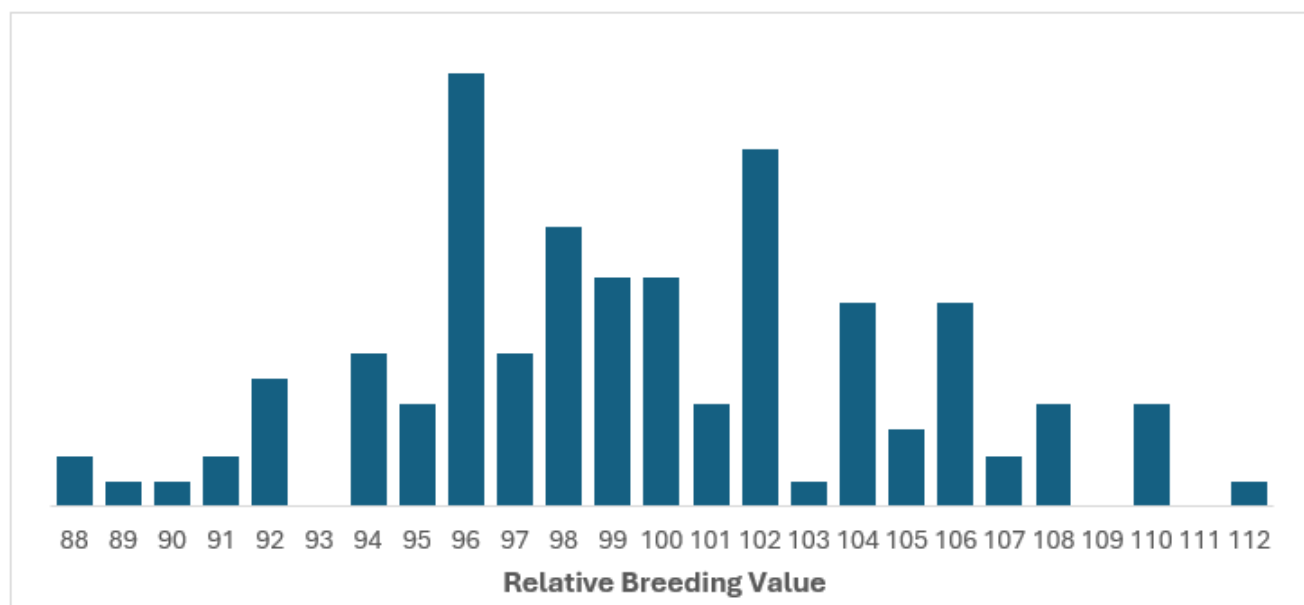
Metabolic Disease Resistance

For Holstein, Jersey and Ayrshire, MDR combines evaluations for three traits with relative weights of 50% for Subclinical Ketosis, 25% for Clinical Ketosis, and 25% for Displaced Abomasum. For each of the smaller population dairy breeds, the Metabolic Disease Resistance index will be 100% Subclinical Ketosis with equal weight for first and later lactations. As with all functional traits, the index will be expressed as a Relative Breeding Value with an average of 100 and a standard deviation of 5. A higher RBV is associated with greater resistance to SCK. The number of official sires for each breed can be found in Table 1 while Figure 1 presents the RBV distribution for Brown Swiss official sires. Reliability levels for official sires vary on average from 52% for the Guernsey breed to 65% for the Canadienne breed.

Table 1. Number of official sires for Metabolic Disease Resistance

Breed	Number
Brown Swiss	122
Canadienne	27
Guernsey	30
Milking Shorthorn	24

Figure 1. Distribution of Metabolic Disease Resistance Relative Breeding Values (RBV) for official Brown Swiss sires



As with other breeds, the MDR index will be available on LactanetGen.ca on an animal's Genetic Evaluation Summary page under the Functional section. Additional details can also be found on the Health page for males.

Summary

Metabolic diseases can significantly impact the profitability of dairy farms. Combining [good management practices](#), during the transition period and early lactation, with genetic selection for MDR, now available for all breeds in Canada, is the best strategy to reduce disease risk and improve herd performance.

Partager



By Hannah Sweett, Ph. D.

Hannah discovered her passion for agriculture during her undergraduate degree at the University of Guelph and through work experience in the dairy industry. She holds a B.Sc. in Molecular Biology and Genetics and a Ph.D. in Animal Genetics, focusing on the genetic improvement of dairy cattle fertility.



By Allison Fleming Ph. D.

