The Brown Swiss Lifetime Performance Index (LPI)

- 13 juin 2025

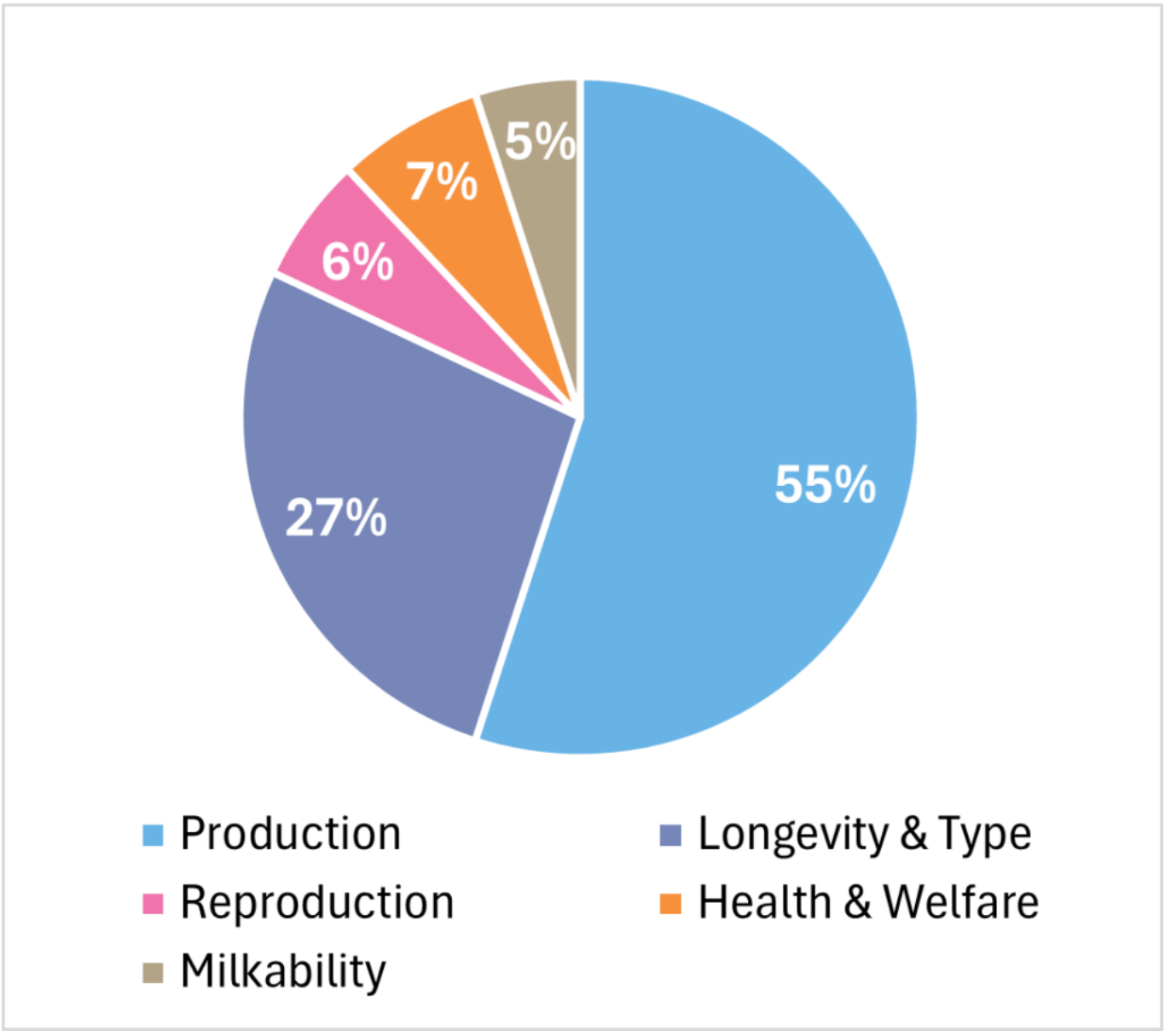
Since its introduction in 1991, the Lifetime Performance Index (LPI) has been a crucial tool for dairy farmers and breeders, guiding informed selection and mating decisions. Over the years, the LPI formula has evolved alongside industry breeding objectives with the inclusion of additional traits. The latest update, in April 2025, marked the launch of a modernized LPI for seven dairy breeds, including Brown Swiss. Let’s delve into these recent changes so you can make the most of your breeding decisions.

Five Subindexes for Balanced Breeding

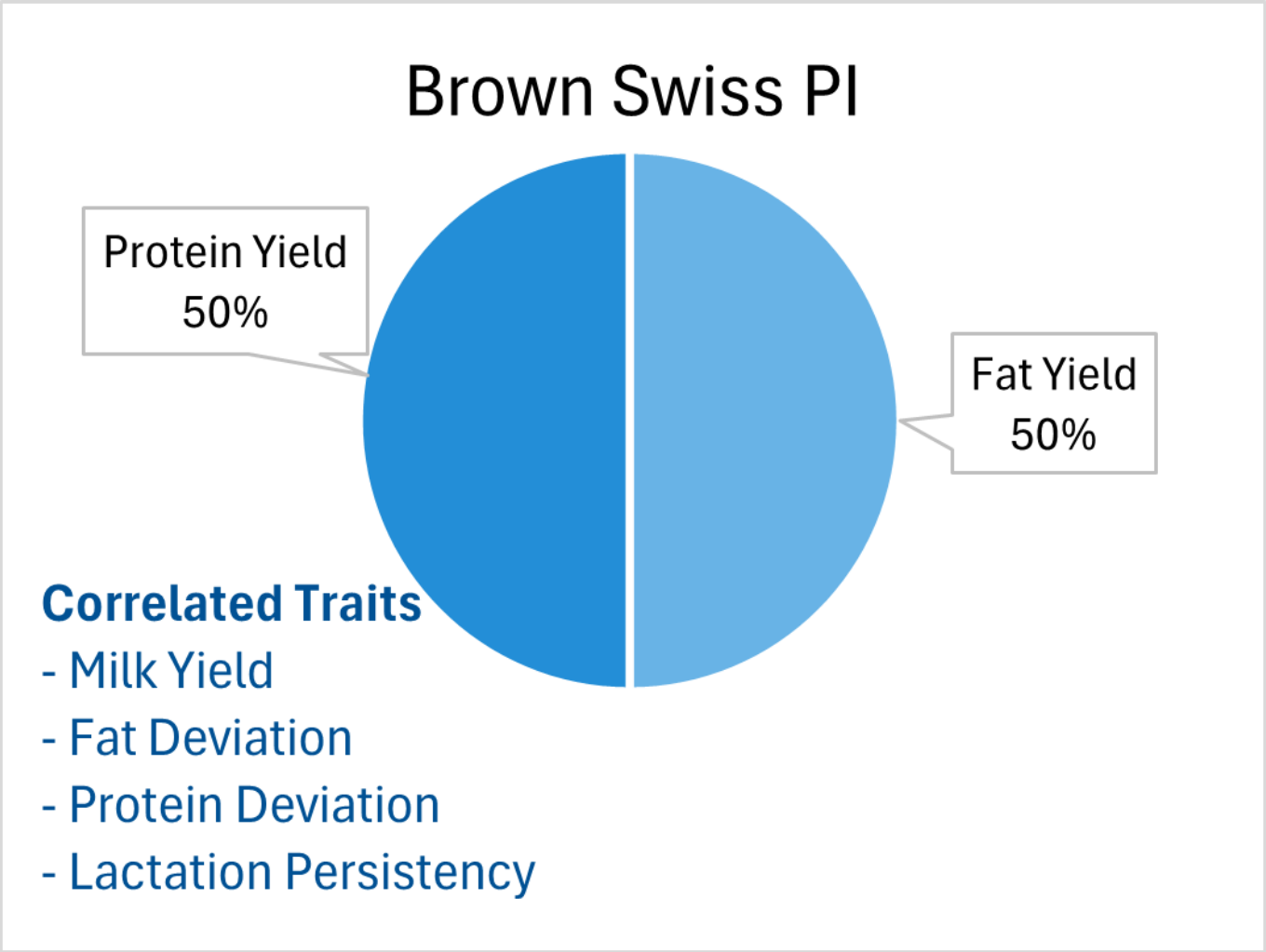
The new formula includes five subindexes for the Brown Swiss breed, namely Production (PI), Longevity & Type (LTI), Health & Welfare (HWI), Reproduction (RI), and Milkability (MI). Each of these subindexes are published on their own and combined into LPI while maintaining the

previous LPI scale, providing several options when making selection and mating decisions. Figure 1 shows the relative weights of each subindex in the LPI formula for the Brown Swiss breed. The subindexes were developed in consultation with the Canadian Brown Swiss Breed Association, industry partners, and breeders by identifying the traits to be directly included as well as traits that are favorably correlated with the subindex, even if not directly included. Each subindex is defined in more detail below along with the traits included for the Brown Swiss breed.

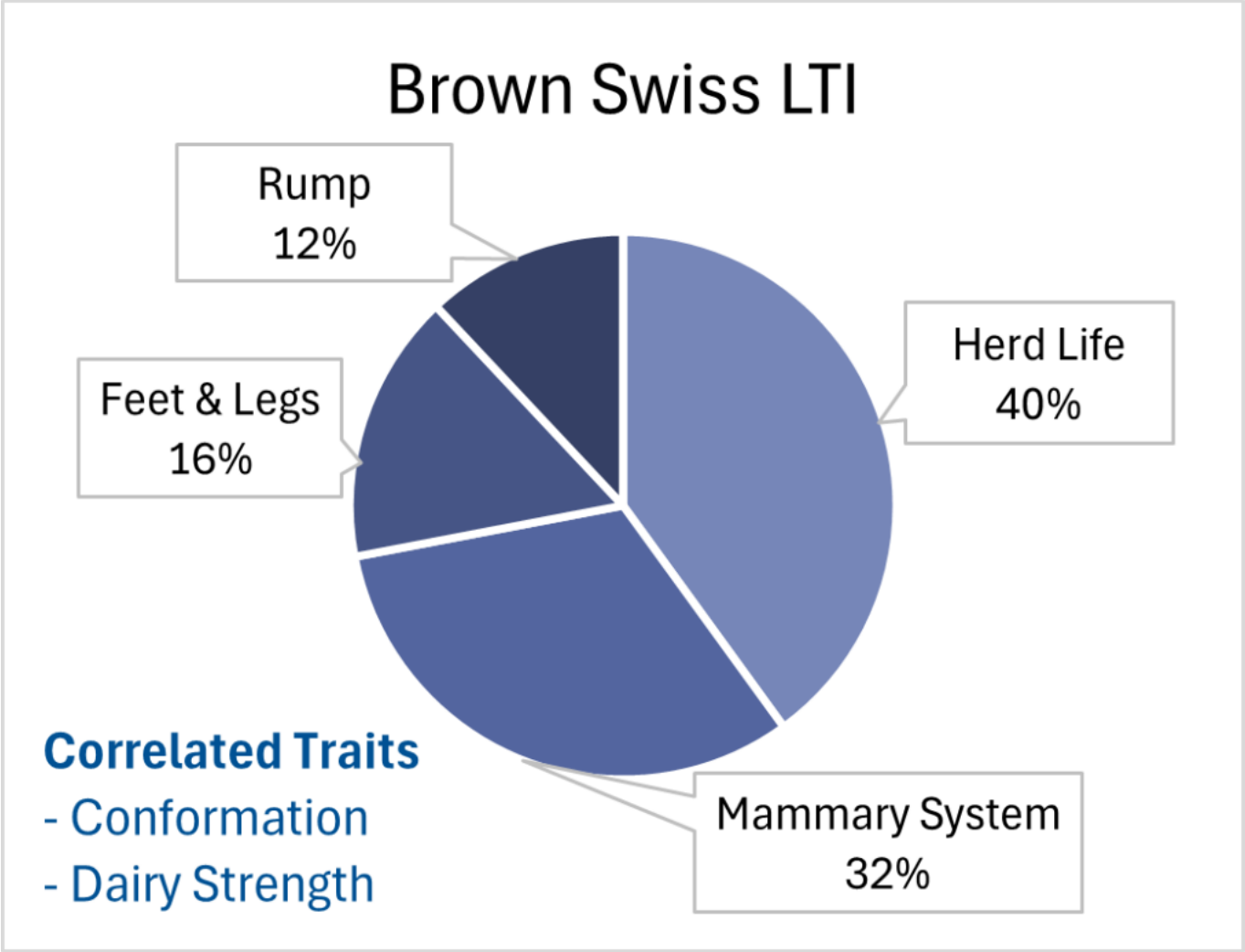
Figure 1. Relative Weights of Subindexes in the Brown Swiss Modernized Lifetime Performance Index



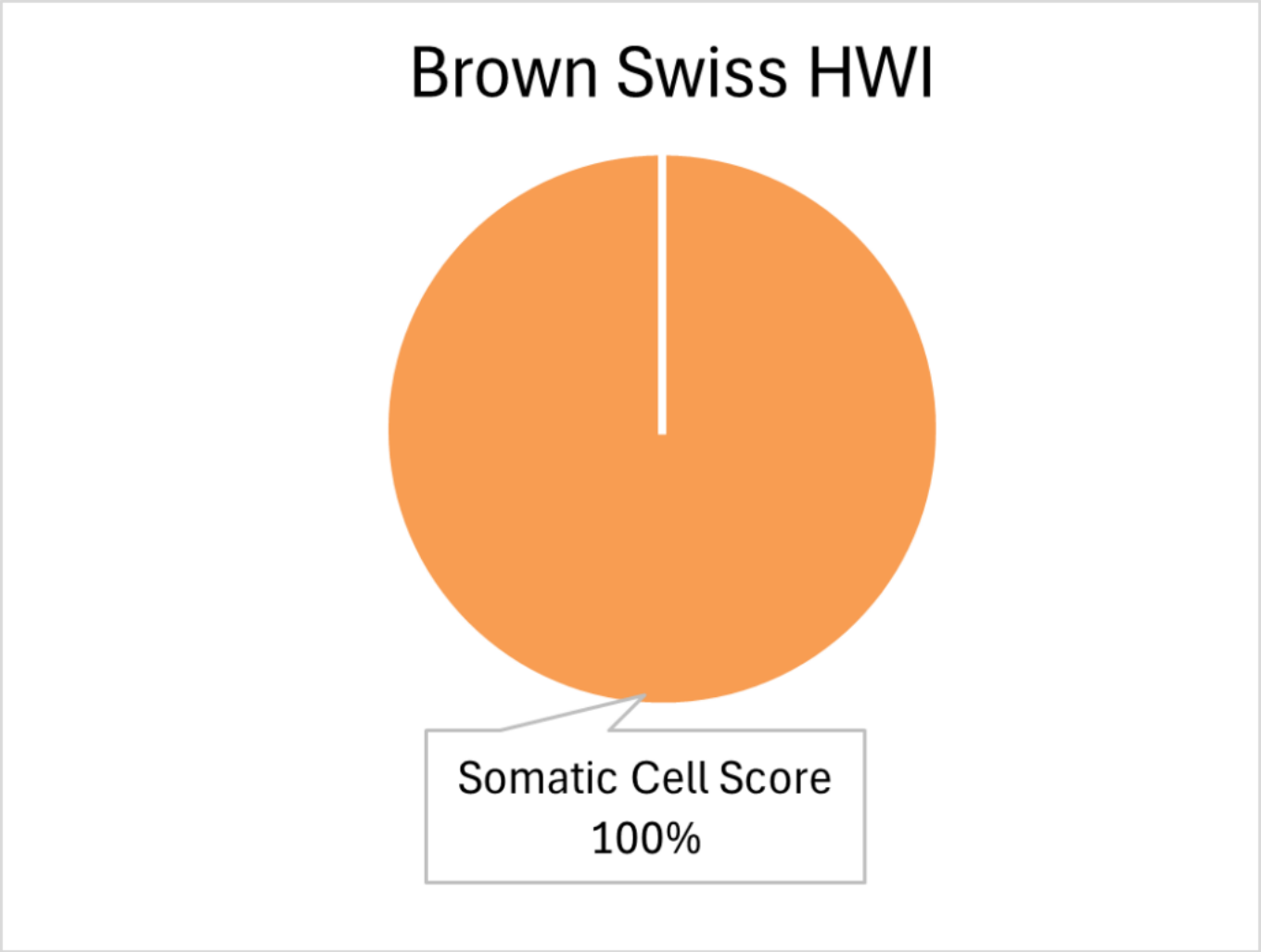
The Production Index (PI) is similar to the previous Production component of the LPI with the aim of maximizing fat and protein yields thereby increasing profitability. This subindex is also positively correlated with Milk Yield, Fat Deviation, Protein Deviation and Lactation Persistency.



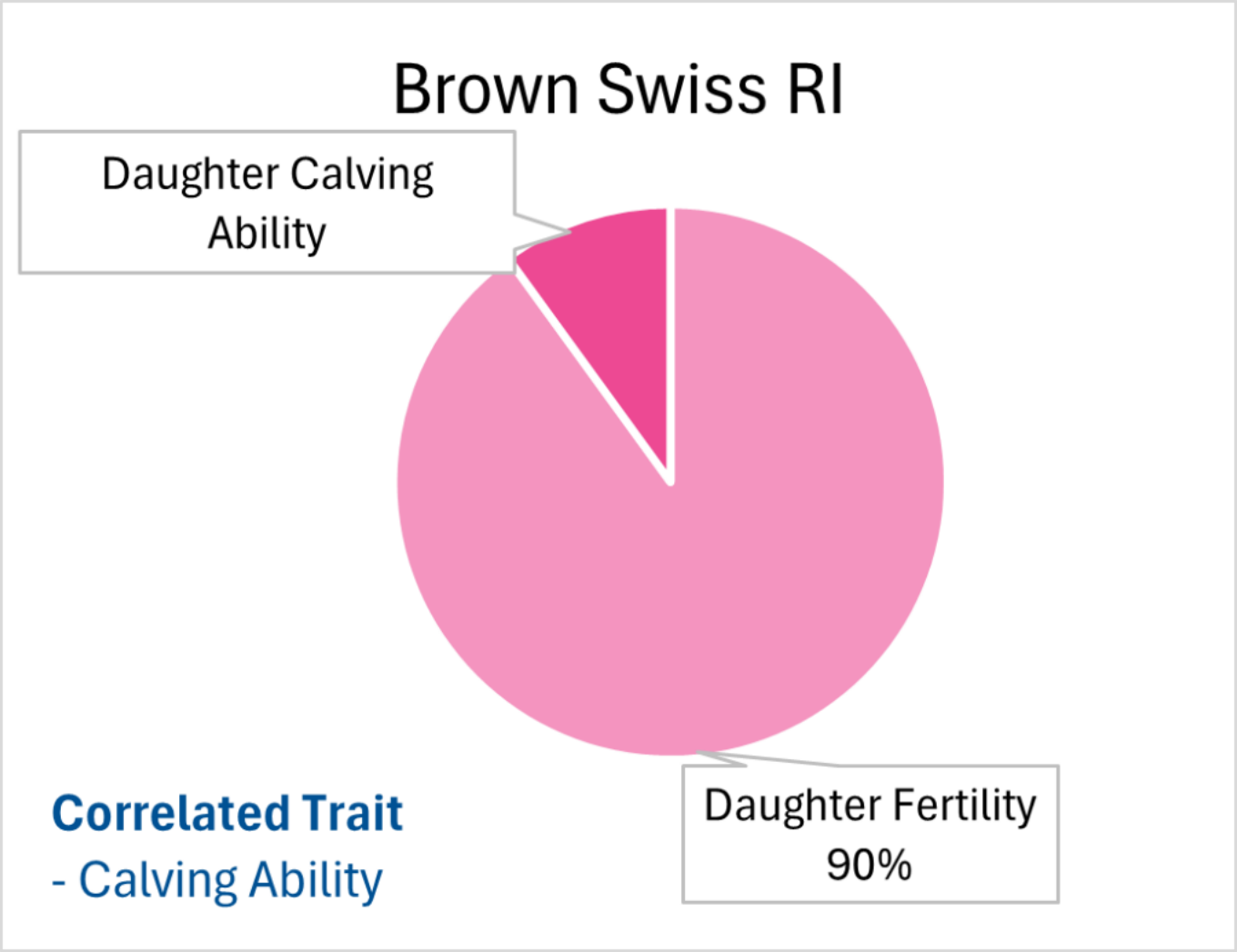
The Longevity & Type Index (LTI) aims to enhance herd longevity favouring functional conformation through selection for Herd Life, Mammary System, Feet & Legs and Rump.



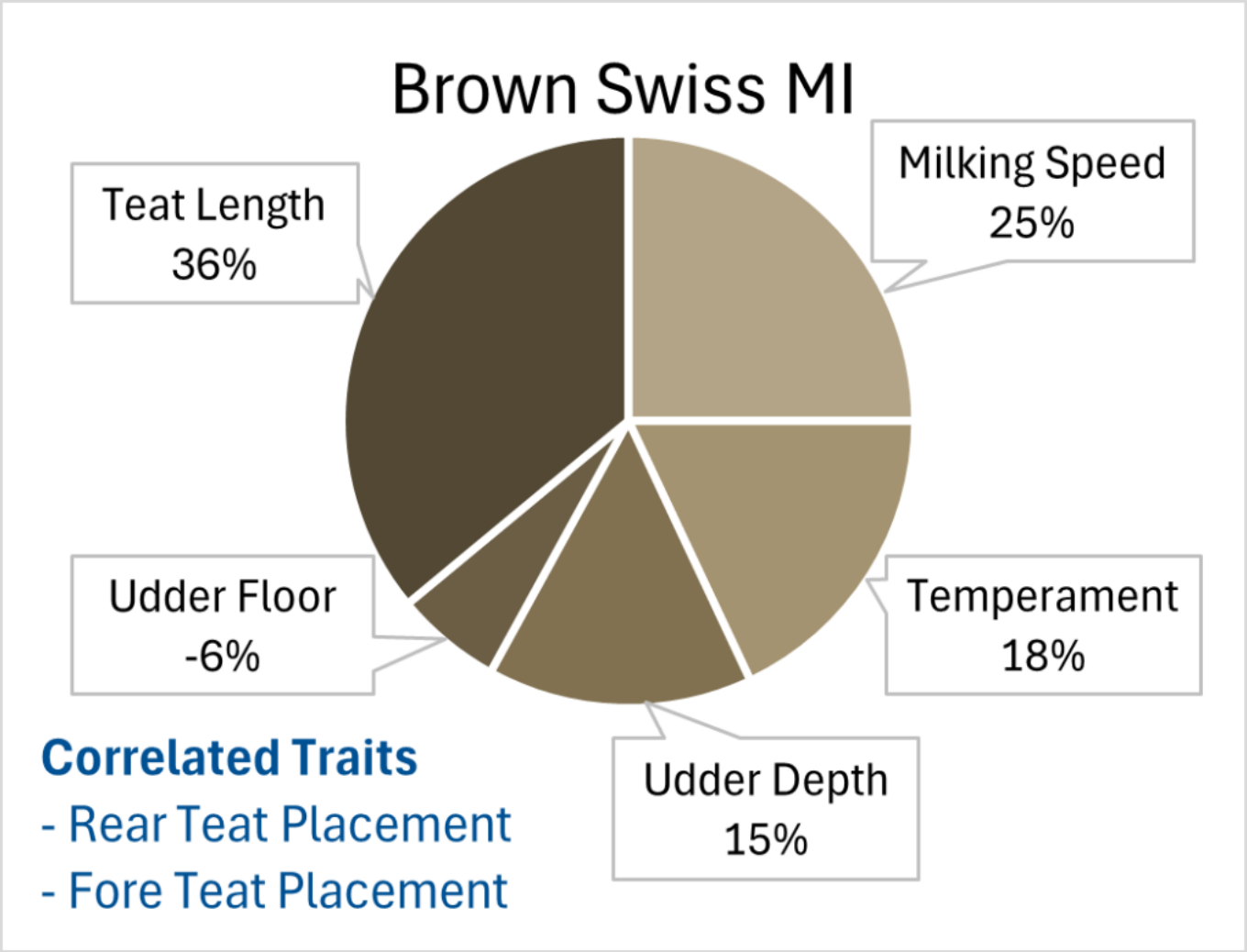
The Health & Welfare Index (HWI) improves disease resistance with selection for Somatic Cell Score. In combination with superior management, the HWI will lead to healthier, more disease resistant cows thereby decreasing expenses.



The goal of the Reproduction Index (RI) is to achieve genetic gain for female fertility and calving performance, which is represented by Daughter Calving Ability. Selection for this subindex also yields progress for Calving Ability.



The Milkability Index (MI) is a new component of LPI with an aim to optimize milking efficiency designed to help all dairy farmers regardless of their production system. In addition to moderate weights on Milking Speed and Temperament, this subindex includes mammary traits related to desired udder and teat attributes.



Quickly Identify Animals that Standout for each Subindex

To help you compare subindex values and identify elite sires, each subindex is expressed on a standardized scale. The average proven sire is set to 500 with a standard deviation of 100, which means that two-thirds of proven sires will fall between 400 and 600. Favourable values will reach 700 or more. For each animal, the subindex values are published on the LactanetGen.ca website on their Genetic Evaluation Summary page along with the combined LPI value. This page includes histograms for each subindex that provide a quick reference to see the strengths and weaknesses for an animal.

LPI

2319
Rel: 92% %RK: 99%

Production GEBV 25*APR

			Kg	%RK	%Dev
Herds	17	Milk	1524	99%	
Daughters/Lactations	35/74	Fat	83	99%	+0.18
Rel	94	Protein	50	99%	-0.09

LPI Subindexes

	Rating	%RK	200 300 400 500 600 700 800
Production	851	99	
Longevity & Type	532	61	
Health & Welfare	580	80	
Reproduction	477	35	
Milkability	643	96	

Personalizing Your LPI

If you are looking for a more tailored approach geared toward your individual herd goals, you have the option to create your own personalized LPI (pLPI) by customizing the percentage relative emphasis on each subindex. In just three easy steps you can view your pLPI alongside the official LPI for each animal:

1. Create an account on LactanetGen.ca
2. In your “Preferences” page, select Brown Swiss as your preferred breed and then modify the subindex weights to create your pLPI.
3. View your pLPI via either the Animal Query or Group Query results.

Summary

The LPI has been updated to reflect a more modern approach to balanced breeding, combining important traits into five subindexes for the Brown Swiss breed. You may wish to make selection decisions based on this official LPI, individual subindexes values and the histograms, or create a pLPI to prioritize subindexes that are most important to you. With LPI, you can boost genetic progress and select for a herd that is high performing, efficient, and long lasting!

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.