



Inbreeding Update - August 2021 -

August 10, 2021

Each year, based on official animal registration and pedigree information within its database, Lactanet Canada computes current statistics related to the level of inbreeding within the Canadian cow population of each dairy breed. In this way, the average level of inbreeding for animals born in the most recent complete calendar year as well as trends in the level of inbreeding over time can easily be monitored.

The following table is based on females born in Canada since 1970 up to and including registered heifers born in 2020.

Current Inbreeding Level and Change in Average Inbreeding by Breed						
Breed	Average % Inbreeding for 2020	Average Annual Increase in Average Inbreeding Percentage by Time Period				
		1970-1980	1980-1990	1990-2000	2000-2010	2010-2020
Ayrshire	6.79	.24	.20	.06	.00	.12

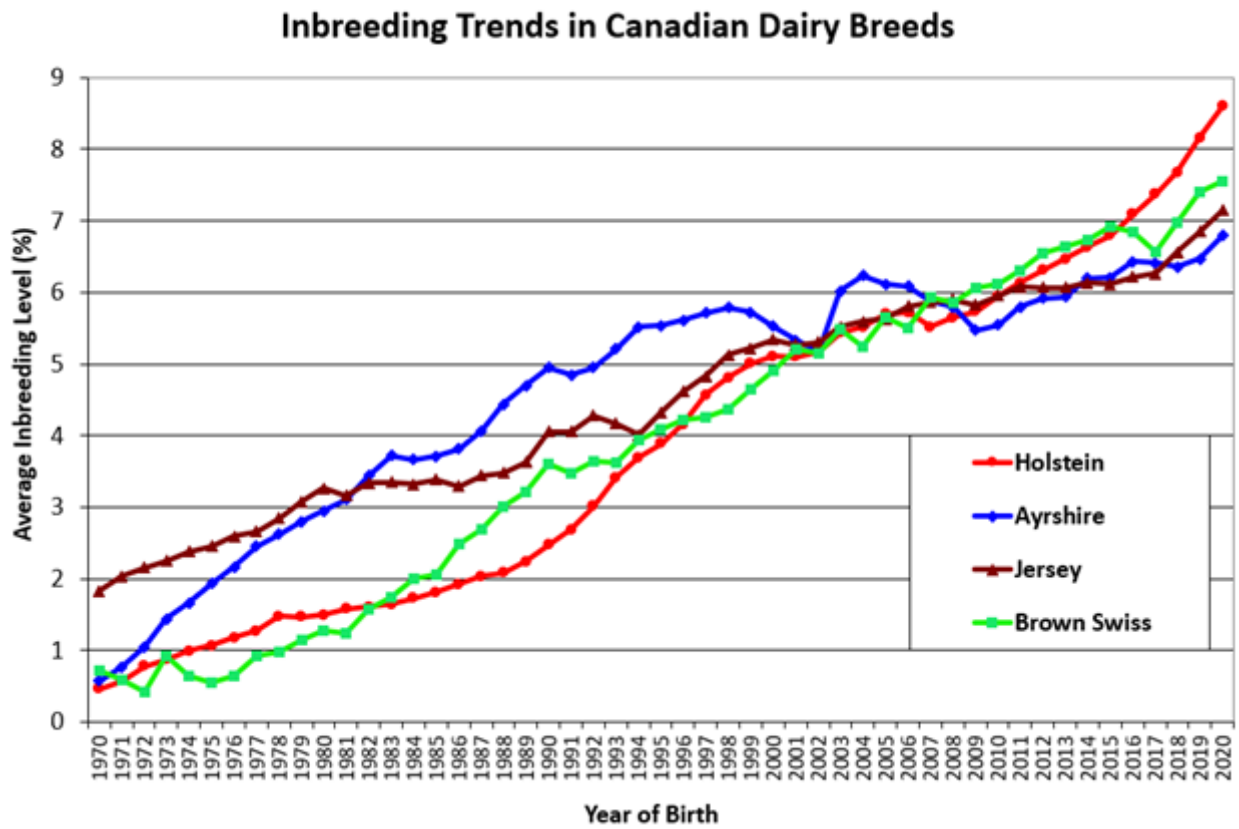
Brown Swiss	7.55	.06	.23	.13	.12	.14
Canadienne	9.65	.16	.22	.30	.19	.07
Guernsey	7.82	.07	.12	.14	.20	.11
Holstein	8.60	.10	.10	.26	.08	.28
Jersey	7.15	.14	.08	.13	.06	.12
Milking Shorthorn	2.64	.01	.01	.21	-.10	.08

Among the four major dairy breeds in Canada, the average inbreeding level for heifers born in 2020 is highest for Holstein at 8.60%, followed by Brown Swiss (7.55%), Jersey (7.15%) and Ayrshire (6.79%). In terms of controlling the rate of increase in inbreeding for females born since 2010, the Ayrshire and Jersey breeds are doing best among these breeds, averaging +.12% per year, compared to a slightly higher rate of increase of +.14% for Brown Swiss and a more significant rate of +.28% per year for the Holstein breed.

Among the breeds with the smallest populations in Canada, Canadienne continues to have the highest average inbreeding, now at 9.65% for females born in 2020, but the average rate of increase since 2010 has been the lowest at +.07% per year. Guernsey heifers born in 2020 average 7.82% inbreeding and the average change since 2010 has also been moderate at +.11% per year. For Milking Shorthorn, heifers born in 2020 average 2.64% inbreeding based on available pedigree data for the breed and the rate of increase has been quite slow at +.08% per year for heifers born since 2010.

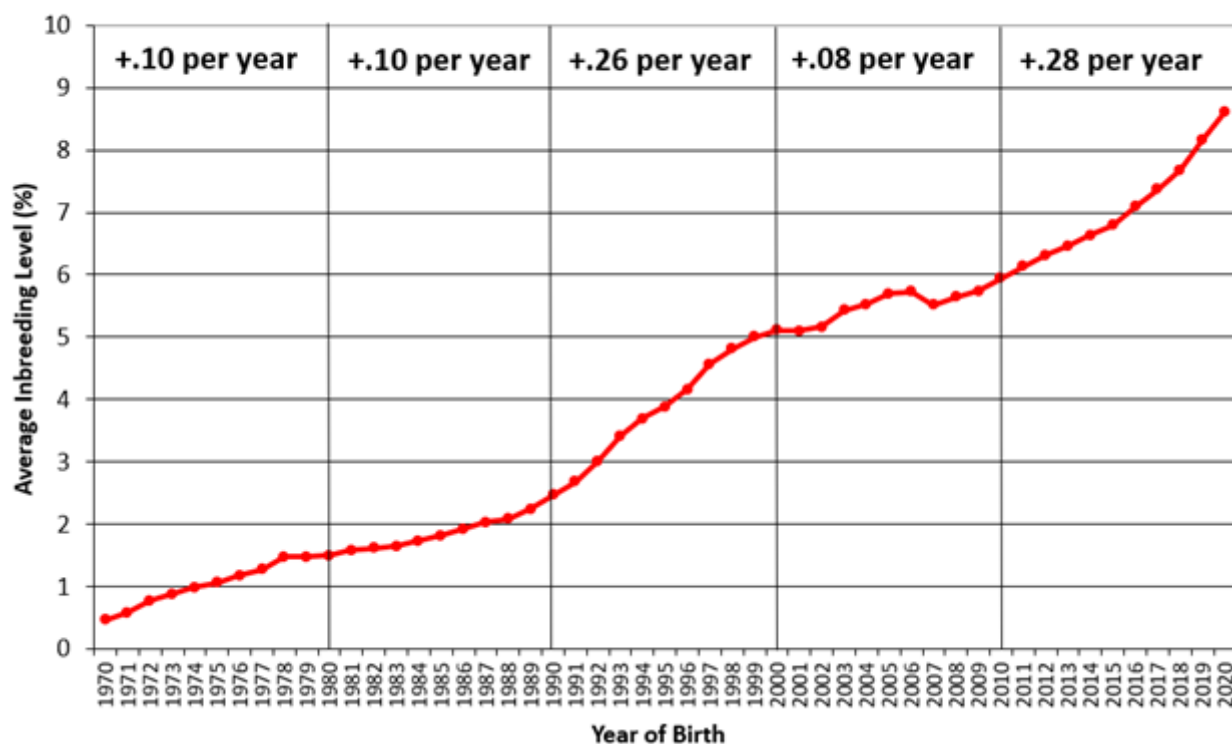
Below is a graph showing the inbreeding trend for the four largest dairy breeds based on registered females born in Canada since 1970 as well as a specific graph for the Holstein population alone.

Graph 1. Inbreeding Trends in Canadian Dairy Breeds



Graph 2. Inbreeding Trend in Canadian Holsteins

Inbreeding Trend in Canadian Holsteins



For further information, please feel free to [contact Lactanet Canada staff](#).



By Brian Van Doormaal

Brian has dedicated his professional career of nearly 35 years involved in the genetic improvement of dairy cattle in Canada. He is well-known for his numerous extension articles and public speaking engagements in both official languages.