



# **Inbreeding Update - August 2023**

September 21, 2023

Each year, based on official animal registration and pedigree information within its database, Lactanet Canada computes current inbreeding statistics 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 2022.

Current Inbreeding Level and Change in Average Inbreeding by Breed						
Breed	Average% Inbreeding for 2022	Average Annual Increase in Average Inbreeding Percentage by Time Period				
		1970-1980	1980-1990	1990-2000	2000-2010	2010-2020
Ayrshire	6.88	.24	.20	.06	.00	.12
Brown Swiss	7.09	.06	.23	.13	.12	.15

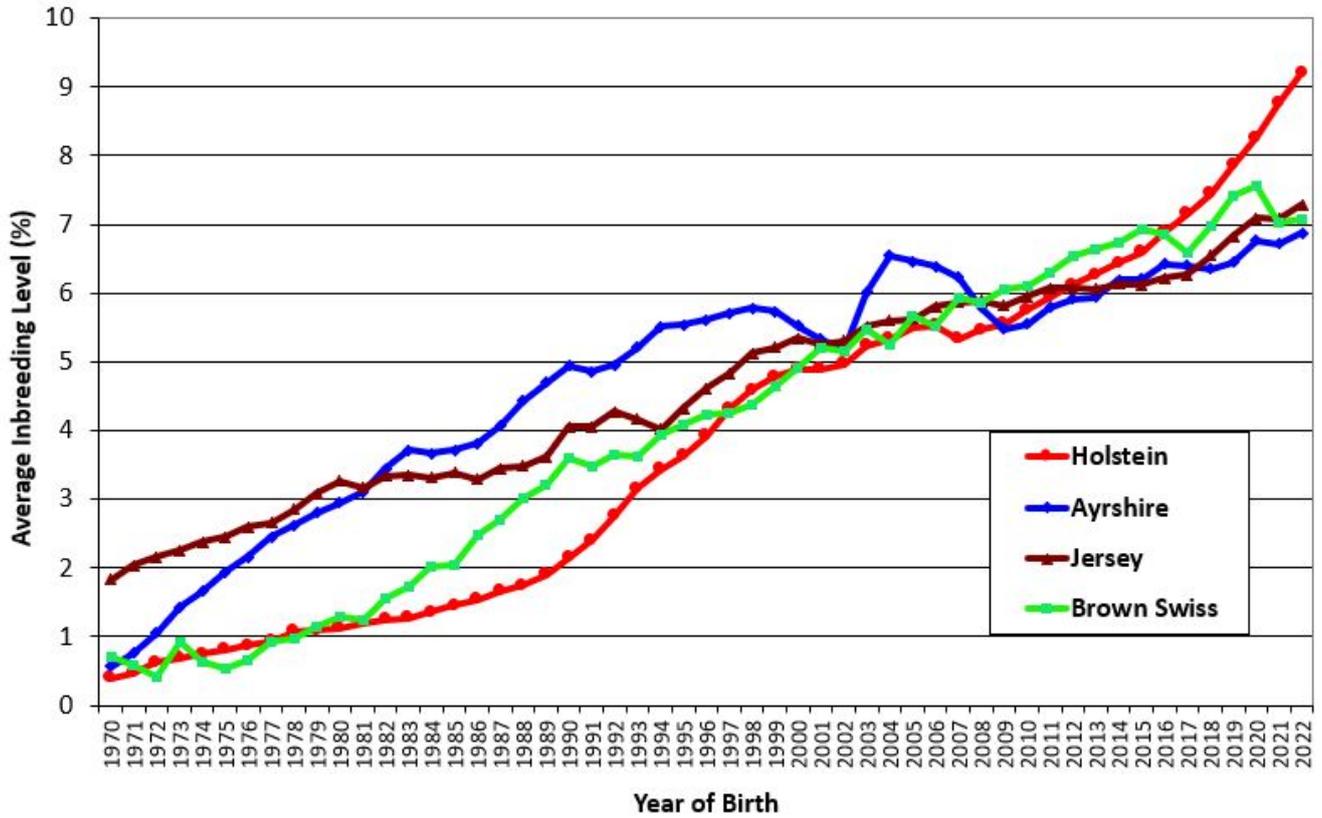
Canadienne	10.58	.16	.22	.30	.19	.09
Guernsey	7.23	.07	.12	.14	.20	.10
Holstein	9.21	.07	.10	.27	.09	.25
Jersey	7.29	.14	.08	.13	.06	.11
Milking Shorthorn	2.39	.01	.02	.25	-.13	.07

Among the four major dairy breeds in Canada, the average inbreeding level for heifers born in 2022 is highest for Holstein at 9.21%, followed by Jersey (7.29%), Brown Swiss (7.09%) and Ayrshire (6.88%). In terms of controlling the rate of increase in inbreeding for females born since 2010, the Ayrshire and Jersey breeds are doing the best among these four breeds, averaging +.12% and +.11% per year, respectively, compared to rates of increase of +.15% for Brown Swiss and +.25% per year for Holstein.

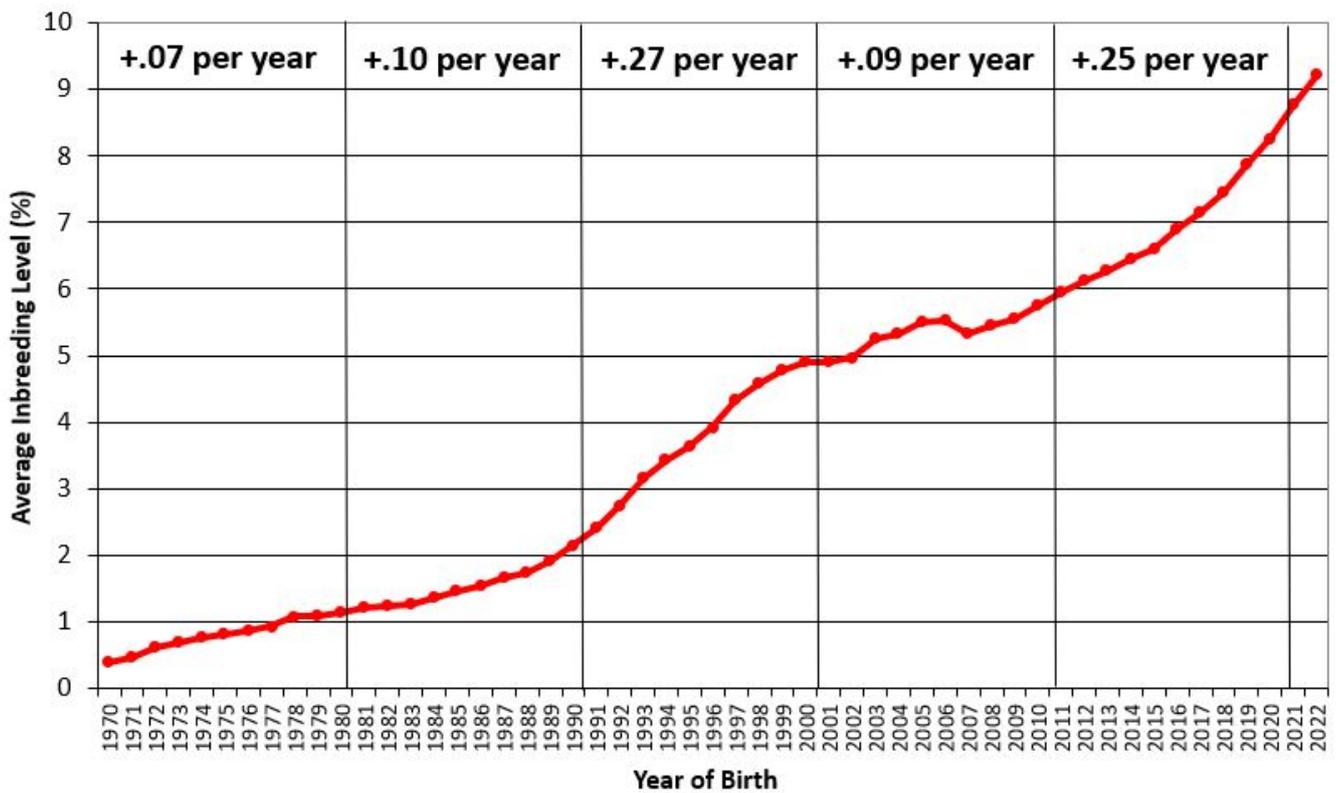
Among the breeds with the smallest populations in Canada, Canadienne continues to have the highest average inbreeding, now at 10.58% for females born in 2022, but the average rate of increase since 2010 has been relatively low at +.09% per year. Guernsey heifers born in 2022 average 7.23% inbreeding and the average change since 2010 has been similar at +.10% per year. For Milking Shorthorn, heifers born in 2022 average 2.39% inbreeding based on available pedigree data for the breed and the rate of increase has been low at +.07% 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. For further information, please feel free to contact Lactanet Canada staff.

### Inbreeding Trends in Canadian Dairy Breeds



### Inbreeding Trend in Canadian Holsteins



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



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Brian has dedicated his professional career of nearly 37 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.