



The Current State of Polled Genetics

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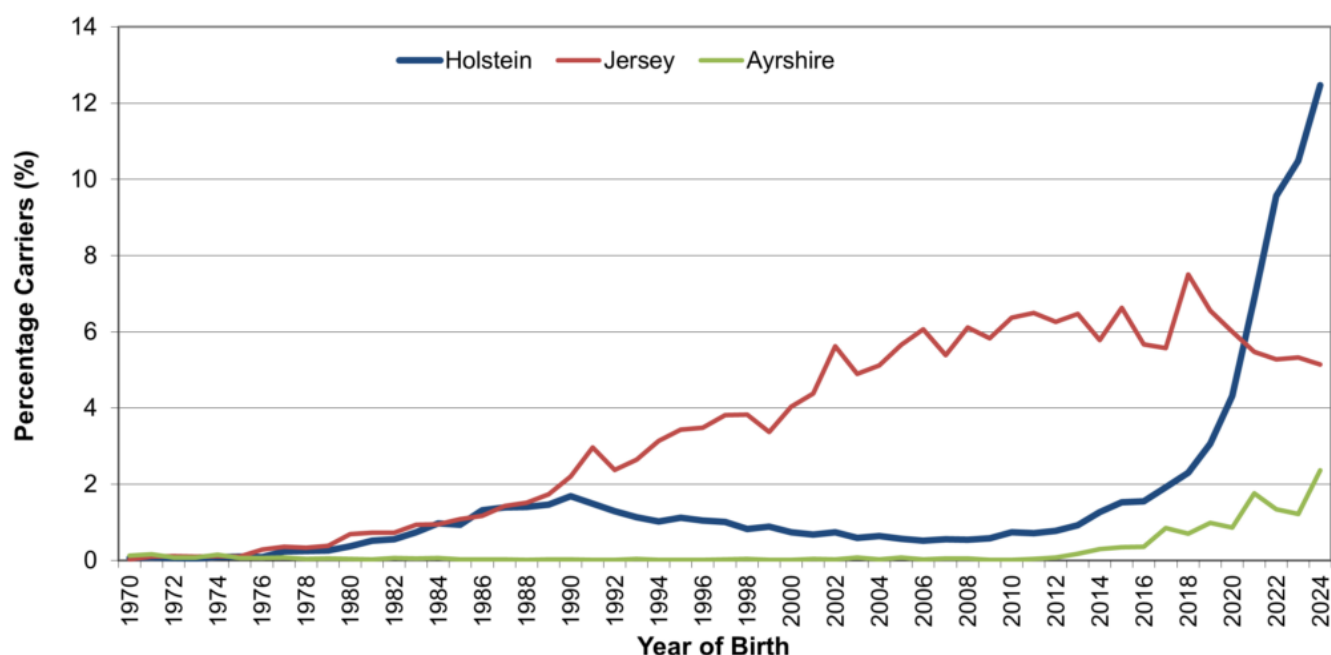
In dairy cattle genetics, understanding the diversity of inherited traits is essential for making informed breeding decisions. Some traits impact production, while others influence animal welfare or management practices. For example, the polled genetic condition, referring to cattle that are born without horns, has gained momentum in the dairy industry. This article explores the trends and inheritance of the polled gene including how it can be achieved within breeding programs.

Genetic selection for polled dairy cattle, cows born without horns, has significantly increased over recent years improving animal welfare and calf management on dairy farms. While the recent update to the [Code of Practice for the Care and Handling of Dairy Cattle](#) provides several requirements for the safe and effective removal of buds or horns to minimize animal stress, it also strongly encourages breeding cows to polled sires. Leveraging polled genetics avoids the need for disbudding or dehorning and the associated costs, making it a desirable trait to many

producers.

Figure 1 illustrates the percentage of Canadian Holstein, Jersey, and Ayrshire females estimated to be carriers of the polled gene between 1970 and 2024. In the last decade, the proportion of Canadian Holsteins estimated to be carriers has risen from 1.5% to roughly 12.5% (Figure 1). This has largely been driven by the increased availability of polled sires in A.I. that also rank high genetically. In the Canadian Jersey population, the upward trend began in the 1980s, peaking at 7.5% in 2018. This spike, however, has since declined in recent years due to a reduced number of high-merit polled Jersey sires. For Ayrshires, the rise in polled gene carriers began more recently, in 2013.

Figure 1: Trend in Percentage of Canadian Females Estimated to be Carriers of the Polled Gene



The growth for these breeds is partly driven by the widespread adoption of genomic testing, which includes polled status as part of the standard genotyping package, making it simple and cost-effective to identify carriers. Additionally, more polled sires have appeared on the top LPI and

Pro\$ lists. This has provided producers with additional opportunities to select high-ranking polled sires that align with economic breeding goals.

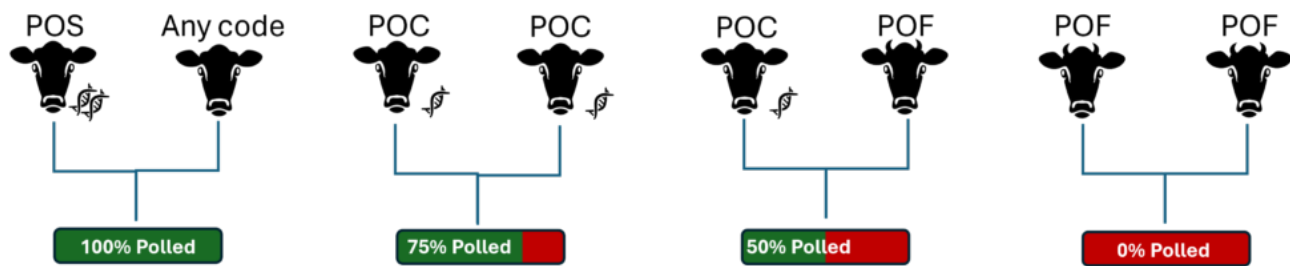
Inheritance of Polled

The rise in polled carriers is also because the dominant inheritance of the polled gene makes selection for polled animals much quicker than genetic conditions controlled by a recessive gene. This means animals that have either one or two copies of the polled gene will be polled (hornless). Moreover, once an animal is DNA tested and confirmed to carry two copies of the polled gene (POS), 100% of its progeny will be polled, regardless of the polled status of the mate. This is the case for the April 2025 #7 LPI sire, Stantons Remover PP. Table 1 outlines the codes for polled test results used by Holstein Canada (top row) and Holstein USA (bottom row) while Figure 2 outlines the probability of polled progeny resulting from different mating combinations.

Table 1: Codes for Polled Test Results Used by Holstein Canada (top) and Holstein USA (bottom)

POR	POC	POS	POF	No Code
				
☒ Not tested Reported hornless	☒ Tested One copy of the polled gene	☒ Tested Two copies of the polled gene	☒ Tested Free of the polled gene	☐ Not tested Not reported hornless
PO	PO	PP	----	No Code

Figure 2: Probability of Polled Progeny from Various Mating Combinations



How to Increase Polled Calves in Your Herd

With the increase demand for hornless sires, AI companies have expanded their offerings of polled sires without sacrificing selection for other traits. For example, 9 out of the top 100 LPI Holstein sires were polled in the April 2025 genetic evaluation release. Most of these sires, however, carry only one copy of the polled gene (POC), which means not all progeny will be polled. For producers aiming to establish a completely polled herd, a continuous use of polled sires carrying two copies of the polled gene (POS) is optimal. Over time, as the polled gene frequency increases in the herd, other bulls may be used depending on the specific mating combination. Because the number of high-ranking POS sires is still relatively small, relying heavily on them without careful planning can narrow the genetic diversity of your herd. If polled genetics is part of your breeding strategy, it is important to monitor inbreeding levels and balance selection with other economically important traits.

Scurs vs Polled

Some polled cattle may also have scurs, but these should not be mistaken as normal horns. Cattle with scurs have horn growths that are loose and not attached to the skull. Scurs are controlled by a different gene than the one controlling horns. Horned animals may carry the scurs gene and pass it on to their offspring, but scurs are only visible in polled animals that carry one copy of the polled gene (POC). The presence of scurs on some polled animals can therefore lead to some confusion but they should be reported as polled.

Summary

The integration of polled genetics into breeding programs has increased in the past decade, representing a meaningful step forward in improving animal welfare and management practices. As the availability of high-ranking polled sires continues to grow, producers have more opportunities to select for this trait without compromising performance. By combining thoughtful sire selection with genomic tools and a long-term breeding vision, dairy producers can successfully incorporate polled genetics into their herds.

Partager



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