



## POLLED GENETICS

---

Naturally polled cattle do not carry the gene for producing horns. Horns are a recessively inherited trait, meaning that horned cattle have two copies of a recessive gene that results in horns. In contrast, inheriting a single copy of a naturally occurring dominant polled allele results in a polled or hornless animal. Therefore, one option to reduce the need for disbudding or dehorning procedures is to selectively breed animals that have the dominant polled allele. Such cattle are more common in beef breeds and still rare among dairy breeds.

While selectively breeding animals for the polled gene is a long-term strategy to reduce the need for disbudding or dehorning in dairy cattle, today's dairy herd has a very low frequency of polled genetics available for use. According to the Holstein Association USA (the Holstein breed is 85% of the current U.S. dairy herd population), the occurrence of the polled gene in the general dairy population currently is less than 2%. Only two of the Top 100 TPI Bulls in December 2021 are tested heterozygous polled, and farmers will not select bulls solely for polled genetics and sacrifice other health and production traits. Therefore, it will take many years for the polled gene to be naturally widely disseminated in the U.S. dairy cattle population of approximately 9.4 million cows.

Any significant change in herd genetics (such as selecting for only polled cattle) should be pursued deliberately and methodically to avoid unintended negative consequences that may impact the cow's welfare, health and/or other production traits. More research is needed, requiring a long-term focus, not a short-term mandate.

## POLLED GENETICS IN THE FARM PROGRAM

---

Rather than rely exclusively on polled genetics, the dairy industry's National Dairy FARM Animal Care program requires that farmers continue to disbud calves by eight weeks of age using pain mitigation strategies to alleviate the pain caused by the disbudding process.



#### ADDITIONAL TALKING POINTS

- Polled genetics can be accelerated through gene editing to perhaps a few generations, but lack of current consumer acceptance and yet to be determined regulatory oversight of such technology presents barriers to making this acceleration happen at this time.
- There is merit to further exploration on how polled genetics may be used as a tool in our on-farm dairy toolbox in the long term, but it is not a change that can be expected to be implemented in the short term.

#### ADDITIONAL RESOURCES

- [The Fast Track to Polled Genetics](#)
- [National Dairy FARM Animal Care Manual \(page 68\)](#)
- [Comparison of gene editing versus conventional breeding to introgress the POLLED allele into the US dairy cattle population](#)
- [FARM Disbudding Topic Brief](#)

#### FREQUENTLY ASKED QUESTIONS

---

##### WHY AREN'T POLLED GENETICS FREQUENTLY USED IN THE DAIRY INDUSTRY?

Quality dairy cattle with polled genetics are still rare among dairy breeds. Making significant changes to herd genetics is not something that can be done quickly. Any changes, such as selecting for only polled cattle, should be pursued deliberately and methodically to avoid unintended negative consequences that may impact the cow's welfare, health and/or other production traits.