

Polled genetics were in demand at many sales in 2012. Venture Man O Man Pretty P (VG-86-2yr-CAN) was one of the top sellers at the Venture Dispersal in December 2012 held in Guelph, ON selling for \$106,000.



In 2012, 336 animals who registered at Holstein Canada with a recessive code of polled, of which, 291 were born hornless.

## DEFINITIONS 101

### HAPLOTYPE

Short sections of the genome that are transmitted as a block of DNA from parent to progeny. By identifying haplotypes, it could enable producers to identify sires and cows carrying certain genes.

### GENOTYPE

The gene or set of genes responsible for a particular trait. The genotype describes the entire set of genes inherited by an individual. It remains constant throughout life and is unchanged by environmental factors.

### PHENOTYPE

Is the value of a trait that can be observed or measured. In some instances, the phenotype may remain unchanged throughout life, however for some traits, can continually change throughout life in response to environmental factors.

## Polled Codes Updated to Complement International Standards

### THE WORLD HOLSTEIN FRIESIAN

**FEDERATION (WHFF)** has recently updated the secondary birthcode PO, which represented animals born hornless, to the code **POR** (reported born hornless– not tested). For the purpose of international data exchange, Holstein Canada has aligned its codes accordingly.

If an animal is reported polled at the time of registration, as part of the verification process, Holstein Canada validates the source of the polled gene from a polled dam or polled sire or both. Until the horn-free animal has been tested, it will be coded **POR** (reported born hornless – not tested). **All animal records currently coded with PO will be updated with the new POR code effective March 1, 2013.**

Once an animal is tested and confirmed polled, there will be no change to the transmitting codes. These remain as follows:

**POS = tested true polled**  
(homozygous PP)

**POC = tested carrier of**  
polled (heterozygous Pp)

**POF = tested free of polled**

Polled in Holstein cattle refers to animals born naturally hornless with the absence of horns and scurs. The polled characteristic in cattle is inherited as a simple, dominant gene. Therefore, horns result from two copies of the recessive gene at that location on the

chromosome. The cause of polled is believed to be a single, dominant mutation which causes the polled phenotype.

An inconclusive result can occur when the haplotype of the tested animal cannot be associated with horned or polled status, as that particular haplotype was not seen in the reference population.

The population of polled animals is relatively small and could potentially be the reason for a small error rate because if more animals were tested and haplotypes defined then more haplotypes could be matched. Holstein Canada has worked with a lab as part of a research project to have additional animals tested to add to the reference population of polled animals in Canada.

Currently there is no direct gene test to determine if an animal is polled, but owners can officially verify the horn-free animal as homozygous or heterozygous through an indirect test. In the event that a direct test for polled becomes available, the test codes will be updated and further information regarding the new codes will be made available.

If requesting a polled test, which costs \$80, producers can find and complete the **GenoTest Application** form available on Holstein Canada's website at: [www.holsetin.ca](http://www.holsetin.ca) > **Genetics > Genomics > GenoTest Application under Related docs (top right-hand corner)**

For further questions or additional information, please contact Holstein Canada's Parentage Research team at 519-756-8300 or by email at [parentageresearch@holstein.ca](mailto:parentageresearch@holstein.ca). 🇨🇦