Dairy cows may be polled (left), scurred (middle) or horned (right).

Breeding polled dairy cattle

Breeding hornless cattle is better for animal welfare

Key points

- Polled dairy cattle are good for workplace safety and animal health and welfare.
- The polled gene is dominant, making it easy to select for.
- The range of high BPI bulls with polled genes on the market continues to grow.

To breed polled replacements, select bulls from the Good Bulls Guide with the genetic code POS or POC.

Horned dairy cattle can cause injury to other stock and to stock handlers. Most Australian dairy farmers practice disbudding on young calves, which prevents horns from growing. While farmers take every effort to minimise the impact of disbudding on animal health and welfare, it is an unavoidable task on most dairy farms.

Until recently, the barrier to breeding a polled herd was the limited number of polled bulls on the market that also had high genetic merit for production and other traits that contribute to farm profit i.e. bulls with a high Balanced Performance Index (BPI).

Genetic codes for polled in Australian dairy cattle

- **POS:** Tested true polled (homozygous dominant)
- **POC**: Tested carrier of polled (heterozygous)
- **POF**: Tested free of polled, i.e. horned (homozygous recessive)

Farmers selecting for polledness had to manage the inbreeding risks associated with using a limited number of bulls over a herd or use polled bulls with lower BPI and compromise genetic gain for other important traits.

Advances in genomics (DNA testing) means virtually all bulls on today's market have been tested for their polled genes. It's now easy to identify high BPI bulls which carry the polled gene. This has seen a rapid increase in the number of polled, high BPI bulls on the Australian market.

Polled genetics are used on 26% OF Australian dairy farms, according to Dairy Australia's 2019 Animal Husbandry survey. This is a big jump from 10% reported in the 2016 survey.

Genes and horns

It's relatively straightforward to breed for polled cattle because horns are inherited by simple genetics

The polled gene is dominant over the horn trait which means that calves that inherit the polled gene from either parent will not require disbudding.

Genomic (DNA) testing identifies whether an animal carries zero, one or two polled genes.

Animals that have been tested are given a genetic code on DataGene's data base. An animal that has no polled genes is coded POF (tested free of polled). It will have horns.

An animal that is tested true polled (POS) carries two copies of the polled gene. This animal will not have horns. If a POS sire is used over a horned cow, all his offspring will be polled.

Most polled bulls have only copy of the polled gene. They are referred to as carriers (POC) in which case about half their progeny are horned.

Dairy farmers can breed for polledness by ensuring that either the sire or dam has a copy of the polled gene to produce a polled calf.

To breed polled replacements, select bulls from the Good Bulls Guide with the genetic code POS or POC.

The strategic used of polled bulls can increase the prevalence of the gene in a herd. Once the polled trait is dominant in a cow family, horned bulls can be used while maintaining the polled characteristic.

Searching for polled bulls

An easy way to identify polled bulls that meet your breeding priorities is to use the Good Bulls App and apply the polled filter.

Polled market

The number of high BPI, polled bulls increases with every run of Australian Breeding Values (ABV). The table shows the number of polled bulls in DataGene's Good Bulls Guide (December 2019).

The list of the top 100 Holsteins includes 10 polled bulls, including the number 4 bull. This bull was ranked number 1 for several prior ABV runs.

Polled semen sires represent 5.4% of total semen sales, according to the latest semen market survey report by the National Herd Improvement Association of Australia (NHIA).

Number of polled bulls in the Good Bulls Guide* April 2020

	Total	True polled (POS)	Poll carrier (POC)
Holstein	103	41	62
Jersey	11	1	10

* Good Bulls must meet DataGene's minimum requirements for Balanced Performance Index (BPI) and reliability and be available for purchase.

Scurs

Scurs are horn-like growth on an animal's head. Scurs are incompletely developed horns which are generally loose and movable beneath the skin, not attached to the skull. They range in size from small scab-like growths to occasionally almost as large as horns. The gene for scurs is transmitted separately and has no effect on the presence or absence of horns. Not all horned cattle carry the gene for scurs and not all polled cattle lack the scur gene.

References

NHIA semen survey report February 2020

More information

DataGene
Ph 03 9032 7191
E: abv@datagene.com.au
www.datagene.com.au. April 2020

DataGene is a dairy industry initiative that receives the majority of its funding from Dairy Australia through the Dairy Services Levy. Published by DataGene Pty Ltd. This Fact Sheet is published for your information only. It is published with due care and attention to accuracy, but DataGene accepts no liability, if, for any reason, the information is inaccurate, incomplete or out of date whether negligent or otherwise.