Horned Animals are Costing You Money!
Horned animals are a major cause of carcase bruising and hide damage, especially when animals are confined to yards or during transport. Bruising alone is estimated to cost the Australian beef cattle industry $22.5 million a year \(^1\). Horned animals also pose a greater injury risk to animal handlers.

It is for these reasons that dehorning has become a routine part of the industry. Dehorning however is a short term solution to the problem of horned animals. Dehorning is also a labour intensive practice that can negatively affect animal productivity and welfare.

Introducing HornPoll™
HornPoll™ is a new DNA test from Pfizer that is used to identify the probability of an animal carrying zero, one or two copies of the poll variant of the gene. This simple yet effective DNA test allows for the identification of genetically polled animals and ultimately the removal of horned animals from the herd.

Breed-Specific Test
The HornPoll™ test is breed-specific based on the utility of the test for particular breeds validated by the Beef CRC\(^2\). The HornPoll™ test is only suitable for the Brahman, Santa Gertrudis, Droughtmaster, Hereford and Simmental breeds, and any crosses of these breeds. Research continues in the application of this test in other breeds.

Benefits of Using HornPoll™ for Cattle
- Identification & selection of genetically polled animals will reduce the frequency of horned animals in the herd.
- Genetically polled herds benefit from savings in labour costs, dehorning costs and decreased animal losses.
- Breeding genetically polled animals provides insurance against future potential animal welfare issues.
- Genetically polled animals, especially bulls, are attracting a premium in the marketplace.
- Increase the frequency of the poll gene in predominantly horned breeds such as Brahman.

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A DNA Test For The Poll Gene In Beef Cattle (cont.)

Polledness Described
Polled cattle are those that do not develop horns. Polledness is mainly under the genetic control of a polled gene and cattle producers are able to use the HornPoll test to breed the horns off their herds. The poll variant of the gene (P) is dominant to the horn variant (H). Simply breeding genetically polled bulls to random females will quickly lower the percentage of calves that have horns and will reduce the need for dehorning with its associated costs and problems.

Interpreting HornPoll™ Results
The HornPoll™ test identifies the following genotypes:

<table>
<thead>
<tr>
<th>GENOTYPE</th>
<th>STATUS</th>
<th>EXPLANATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP (Homozygous)</td>
<td>Polled</td>
<td>This animal possesses two copies of the poll variant of the gene. This animal is highly likely to express a polled phenotype and should always pass a poll variant to its progeny.</td>
</tr>
<tr>
<td>PH (Heterozygous)</td>
<td>Carrier</td>
<td>This animal carries one copy of the poll variant and one copy of the horn variant of the gene. This animal is highly likely to express a polled or scurred phenotype and will transmit either the horn or poll variant to its progeny.</td>
</tr>
<tr>
<td>HH (Homozygous)</td>
<td>Horned</td>
<td>This animal carriers two copies of the horn variant of the gene. This animal is highly likely to be horned and will always transmit the horn variant to its progeny.</td>
</tr>
</tbody>
</table>

Based on the HornPoll test, the report includes a probability of the animals reported genotype reflecting the horned/polled status of the animal. The probability estimates are given as a range between 0-100%, with a higher value representing an increased level of confidence in the result, based on Beef CRC validation results.

As the poll/horn trait is complex and not controlled solely by the number of the poll variants of the gene that an animal carries, in some cases the status of a tested animal or its progeny will differ from that expected.

Validation
The Beef CRC, MLA, CSIRO and the Animal Genetics and Breeding Unit at the University of New England discovered the gene marker used in the HornPoll test under Australian conditions and with Australian breeds of cattle. The test was developed in direct response to industry concerns about dehorning and animal welfare. The outcomes of an industry validation study conducted by the Beef CRC forms the basis of the reporting criteria used for HornPoll.