Testing for Neuropathic Hydrocephalus in your herd

Neuropathic Hydrocephalus (NH) is a lethal genetic defect that has been identified in Angus and Angus-influenced cattle. NH is caused by a recessive mutation at a distinct location on a single chromosome. NH-affected calves are stillborn with an extremely large cranium with little or no brain or spinal cord.

- It is estimated that 50 to 70 percent of mortalities relating to NH occur through embryonic or fetal loss during gestation. This may cause the defect to be misdiagnosed or go unnoticed by beef producers.
- A common ancestor, GAR Precision 1680, has been identified on either side of pedigrees of all affected calves.

The Impact of NH

Dr. Jon Beever at the University of Illinois, in collaboration with Dr. David Steffen at the University of Nebraska-Lincoln and the American Angus Association, has identified the gene mutation responsible for NH. This was found through the initial testing of A.I. sires used in Angus and Angus-influenced breeding programs. Of the 934 bulls tested, 91 were identified as NH carriers[1].

Identifying NH-carrier animals provides critical information that can impact your future breeding decisions. By identifying carriers, breeding decisions can be made to greatly reduce the frequency of the recessive allele in your herd over time.

Testing for NH

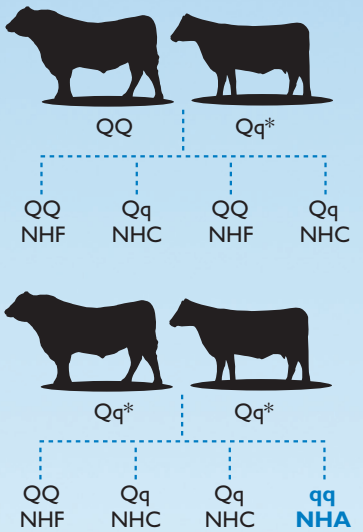
Pfizer Animal Genetics has produced a commercial version of the test originally developed by Dr. Beever.

Samples may be submitted in one of the following forms:

- **Hair follicles.**
  When submitting hair samples, please make sure at least 25 follicles (bulb intact) are included to ensure an adequate volume of DNA to complete the test.
- **Blood FTA® cards.**
- **Semen samples.**
- **Whole blood tubes.**

For more information on NH and genetic defect tests offered by Pfizer Animal Genetics, please visit our Products page at www.pfizeranimalgenetics.com.au or contact a customer service representative at 1300 768 400.

Chances of an NH Calf



*q denotes the recessive gene for the NH trait.

Importance of NH Testing

Testing of suspect animals is essential to identifying carrier animals.

As the illustration shows:

- Mating an NH-free (NHF) animal with an NH-carrier (NHC) animal can result in offspring that are NHF. However, there is a 50 percent chance that the resulting offspring will be an NHC.
- Mating two NHC animals can result in a 25 percent chance of an NH-affected (NHA) calf and a 50 percent chance of an NHC.

For breeders of Angus and Angus-influenced cattle, test results on suspect animals can:

- Enable breeding decisions that will eliminate incidence of the defect over time.
- Confirm carriers or syndrome-free animals.
- Facilitate sale decisions.

[1] Beever J. An Update on Neuropathic Hydrocephalus in Cattle. American Angus Association. Available at: http://www.angus.org/NH_Summary.pdf. Accessed June 8, 2009.

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