



## Canadian Angus Association

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## Mannosidosis (MA)

### The Condition

Alpha Mannosidosis (MA) is an inherited condition in beef cattle that affects the nervous system. In affected animals the Alpha Mannosidosis enzyme does not work optimally to break down sugars in lysosomes causing a buildup of sugars and deterioration of the central nervous system. Like AM, NH and OS this condition is fatal, however, symptoms do not normally develop until the animal reaches sexual maturity. At about yearling age affected animals develop head tremors, loss of muscle control and difficulty walking, aggression issues, failure to thrive, and ultimately die.

### The History

MA is one of the oldest genetic defects known in beef cattle. The Australian Angus Association undertook an aggressive endeavor to eradicate the gene from their herdbook in the 1980s after several Australian calves were diagnosed with MA. Much of what we know about MA today is a result of their research and efforts. Calves affected by MA have been documented in several countries including Scotland and America, and in several different beef breeds including Aberdeen Angus, Galloway and Murray Grey.

### The Genetics

Similar to AM, NH and OS, the gene that causes Alpha Mannosidosis (MA) is a recessive gene, requiring two carrier parents to be bred before an affected calf is ever seen. To date there have been no reports of an affected calf in Canada. The frequency of the recessive gene in the Canadian herdbook is minimal. However, carrier animals, which look normal, can still pass on the gene to future generations. A DNA test has been validated in North America so that these carrier animals can be identified.