

## **A2 Genotyping**

The solids found in cow's milk are composed of fat, protein, lactose and minerals. Beta-casein is one of six milk proteins and is produced by the CSN2 gene. Twelve genetic variants of CSN2 are known which cause changes of certain amino acids in the beta-casein protein and alter its properties. These variants can be classified into 2 groups (A1 and A2) which code for different amino acids at one specific site in the gene. Milk containing A2 beta casein is considered to have health benefits for nursing calves and for human consumption.

The GENESEEK is certified by the A2 Corporation Ltd to offer a DNA test to identify animals that carry the A2 beta casein variant. Test results are critical to implement breeding programs for production of A2 homozygous animals.

Results reported as:

A2/A2- 2 copies of A2 present. If bred to other A2/A2 animals, only A2/A2 offspring will be produced.

A1/A2- 1 copy of A2 present. If bred to A2/A2 animals, 50% of offspring will be A2/A2.

A1/A1- No copies of A2 present.

**The A2 Beta-casein explains why smaller cows with less milk can raise big calves. A2/A2 cows have a genetic edge for producing more pounds of beef on less inputs. Breeding to A2/A2 bulls is a start to producing offspring that are homozygous for this trait.**