

# PRESS RELEASE

## **VikingGenetics ready to use Genomic Selection**

**Genomic Selection will be possible in VikingGenetics in August. The breeding plan will be far more effective and we will be able to improve the breeding progress by 50% or more. At the moment we work closely together with researchers from Aarhus University in introducing Genomic Selection.**

In January 2008 a new set of markers became available. This set has 60,000 markers – colloquially called SNP. Because of the large number of markers it is possible to “spread” the markers to all chromosomes and find the majority of the genes affecting the individual trait. This is very effective as we can develop the gene tests depending on the family relations of the animals.

The markers will be visible through certain laboratory techniques based on DNA purified from the animal from e.g. blood or semen.

### **Revolution in breeding**

Genomic Selection will revolutionize the breeding work in short and long term because of a significant increase in the potential breeding progress by 50% - and for some traits even more.

A substantial explanation of this major breeding progress is increased security for the breeding values particularly for health and reproduction with low heritability since it will be possible to gain the same information when the bull is born as we today get after waiting 4½-5 years for the bull to have his first breeding values based on milking daughters.

This means that the distinction between a young bull and a proven bull will slowly fade when the breeding value is available as this early time. HOWEVER, we still need to make phenotypical registrations for the daughters from sires of sons in order for us to know the “true” breeding values of the bull as certain as possible.

Both the economical and breeding perspectives are dramatic – increasing the competition between the large international AI Centres in the USA, Australia, New Zealand and Europe.

VikingGenetics gambles in this competition on traits leading to a healthy and robust cow – that is, an economical cow in the large herds of the future.

### **Which traits do VikingGenetics gamble on?**

We gamble on all the traits in the breeding goal but in particular on traits relating to the health and reproduction of the cow. These traits characterize the Nordic profile and are important to both the welfare of the cow and the economy of the cattle breeder. The registrations made by the cattle breeders are worth gold since we can use the registrations with the 60,000 markers. The markers will give invaluable information on precisely these important health traits that are not available in countries outside Scandinavia.

Only the Scandinavian countries have a cattle database containing a complete set of registrations on animal health – the so-called clinical registration. In addition is the fact that we have broader registration on calving ease, fertility and other health compared with the countries that we normally compare ourselves with.

Therefore we are – as the only ones in the world – able to use the new "tools" to find markers for functional and healthy dairy cows based on clinical registration in the Cattle Database. The exact same traits where the new genetic tools are expressed most effectively.

### **We minimize inbreeding and hereditary diseases**

Use of SNP information will mean that we far more effectively will be able to handle inbreeding, include new traits in the breeding goal and deal with hereditary diseases. Even though Genomic Selection may increase the breeding progress significantly by 50% or more, we are also able to keep down inbreeding. Furthermore we will discover the lethal genes causing hereditary diseases before they appear in cattle in the herds. All this is a result of a far more effective tool in selecting animals for breeding based on detailed information on the function and location of the genes.

### **Unique options with Genomic Selection**

Based on an effective registration system, VikingGenetics have unique options for running a more effective breeding programme with focus on the functional traits. Thus when using the new markers, we are able to offer semen of bulls that breed dairy cows with highly improved total economy, health and longevity.

As soon as in August 2008 we will be able to select the first young bulls and bull dams based on genomic breeding values.

The first genomic breeding values for young bulls will be available in August and we expect an ongoing development in selecting our best breeding animals using Genomic Selection.

Cattle breeding is changing with the new genetic tools.

Any questions concerning this press release should be directed to:

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