vikingnews

{ NO 02 | JUNE 2016 }

From pure Holsteins to mixed herd

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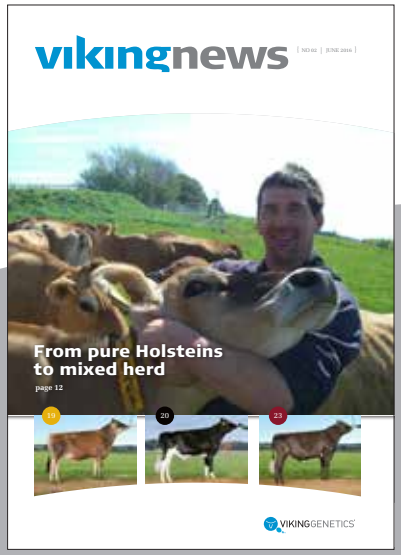

By Sara Wiklert Petersson,
Sales Manager, VikingGenetics

VikingGenetics bulls come fully optioned!

Apart from the usual conformation and management traits most countries select for, Viking sires have a long list of extra traits that if ignored, eat away your profit margins because of unwell cows.

VikingGenetics has been fortunate to have the ability to work with health traits since decades due to the extensive registrations, and with genomic selection, we have had the possibility to gear up even more.

All registrations are collected in the same database with strict veterinary rules resulting in HIGH RELIABILITY also for health traits. Our index for udder health is primarily based on real veterinary diagnosis of clinical mastitis with additional information on cell count, and the index for resistance to other diseases includes information on metabolic disorders as well as reproductive disorders. The veterinary contribution has facilitated this for decades and given a great tool when it's times to select healthy cows.

Furthermore, all hoof trimmers contribute with information for the hoof health index that includes seven different hoof diseases and this information gives an excellent opportunity in selection of cows with healthy hoofs and ease to walk.

The newest addition to the long list of health related breeding values is youngstock survival which is now included in the Nordic Total Merit (NTM) for the first time. This index describes the survival of the calves up to 15 months of age for heifers and 6 months for bulls.

If you are interested in getting a full declaration on your own females, you are welcome to test them in our system. The NTM gives you the best possibility to select for the most profitable cow.

Welcome to read our new VikingNews – with stories from around the Viking World as well as interesting news about breeding and sires! Enjoy!

vikingnews

LAYOUT AND PRODUCTION: vahle*nikolaisen.

PHOTOS: Alex Arkink, Elly Geverink, Elisabeth Theodorsson, Tiina Tahvonen and employees by VG.

COVER PHOTO: John Adams, herdsman at D Foot Farm Ltd., with a friendly Danish import.

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80 different flushing bulls in one year
When we select bulls to our flushing contracts, we want to use as many different bulls as possible. We make a good mix of our own Viking bulls, but we are also using the best bulls from other countries, based on NTM scale. The average NTM of the 80 bulls we have used last year is +34 in NTM, and that makes the next generation very promising.
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Youngstock survival is included in NTM

By Anders Fogh (SEGES/ NAV), Terhi Vahlsten (Faba/NAV) and Emma Carlén (Växa/NAV)

In May 2016 young stock survival is for the first time included in NTM for RDC (Red Dairy Cattle), Holstein and Jersey. The index was introduced in November 2014 and it describes survival during the rearing period from day number one and until 15 months for heifers and 6 months for bull calves.

It is economically beneficial to genetically improve youngstock survival to get a lower occurrence of dead calves during the rearing period. Further, results show that the genetic correlations between youngstock survival and other traits in NTM generally are close to zero.

Therefore, in order to strengthen The Nordic Total Merit (NTM) and to get genetic progress for youngstock survival, Nordic farmers have decided that this trait will be included in NTM.

The weight factor used to include youngstock survival into NTM is based on breed-specific, economical calculations. For all breeds, the size of weight factor is comparable to the weight on birth index. The relative weight on youngstock survival is the highest for RDC and this is partly due to a larger genetic variation for survival traits in the rearing period and partly due to the effect of higher economic value of growth in RDC.

Only limited re-ranking

Including youngstock survival in NTM has only limited effect on ranking in Holstein and Jersey. The effect is somewhat larger in RDC due to the higher weight.

Most important is that NTM will be strengthened so that the value of 1 NTM unit will be higher than before. ●

Facts:

RDC: The weight for young stock survival in NTM for RDC is 0.22, which makes it the fifths highest weight after production 1.00, udder 0.35, udder health 0.30 and daughter fertility 0.24.

Holstein: The weight for young stock survival in Holstein is 0,14, the fifths highest weight in NTM after production 0.75, udder health 0.35, daughter fertility 0.31 and udder 0.25.

The trait is measured from day 1 until 15 months for heifers and 6 months for bull calves.

All the current weights for different sub-indices in NTM and the correlations between NTM and sub-indices can be found on the web page of the Nordic Cattle Genetic Evaluation (NAV) (www.nordicebv.info) under NTM and breeding values/NTM.

Genomic breeding values will be updated each month

By Lars Nielsen, Head of breeding, VikingGenetics

According to the new provision, farmers will have more options to choose the cattle with which they want to work.

Since the genomic breeding values is the key step in genomic selection and we are using younger bulls as sire of sons, making breeding evaluations more often became obvious.

Nowadays we made the evaluation every three months and show the bulls' official breeding values when they are 10 months old. However, some of them lose the chance to be evaluated because they have not reached the age by the time the evaluations are being made.

To facilitate most bulls entering evaluations as soon as they have completed 10 months, The Nordic Cattle Genetic Evaluation (NAV) have decided to evaluate and publish all genomic breeding values every month. With the new provision farmers will have more options to choose from.

The new measure is going to rule from 1 June. This also means that for example bulls on daily plan can have some minor changes in breeding values between the four major index runs which run in February, May, August and November.

Breeding values based on daughter information will still be evaluated only four times per year. ●

High NTM – high milk production and less mastitis

By Nanna Hammershöj, breeding advisor, VikingDenmark

The Nordic Total Merit (NTM) it´s a decisive tool in Ladefogeds farm in Norager, Denmark, to optimize their whole business and have the best profit at the end.

Christian and Asger Ladefoged owns the I/S Ladefoged farm in Denmark in which they have 500 dairy cows. Asger takes care of the cows and his father Christian is in charge of the heifers at another farm. Their breeding goal is clear; they want a functional cow with good udder that works in one of the eight Lely robots that they have in their property.

The herd they are working with every day has to have high production and good temperament. The Ladefoged farm produces 12,200 kg Energy Corrected Milk (ECM) per cow and uses sand as a bedding material to make a good environmental for the cows. They prefer the cows not too big, to make them fit in both the barn and the robot.

One breeding tool used by advisors in Denmark is the NTM on herd level. NTM is a combined index of 13 different traits which all have an economic impact for the dairy farmer. The division of the herd into three categories with low, medium and high NTM makes it easy for Asger and Christian to see the differences. "I have 100% confidence in my breeding advisor and he decides the mating plan", says Asger.

Asger Ladefoged with one of his cows.

The largest difference on the farm Ladefoged I/S between the lowest NTM group and the highest NTM group is on mastitis and production. There is a difference of 8% on treated mastitis, with 13% in the group with low NTM and 5% in the group with high NTM.

Regarding production there is a big difference in second lactation where lowest third has a production of 11,624 kg milk compared to the highest third having 12,560 kg milk. A difference of 936 kg milk, as shown in table 1.

"You need to have the time if you are going to manage the whole strategy with breeding" says Asger, which is a member of the Board of Representatives in both VikingGenetics and VikingDenmark, as he indicates that he has full confidence in the work that has been done so far from breeding advisors in VikingDenmark.

Table 1. Differences in production on NTM level in farm Ladefoged I/S

	Lowest NTM group	Highest NTM group	Difference
Average NTM	+5	+18	+13
Prod 1st lactation	8972 kg	9268 kg	+296 kg
Treated mastitis 1st lactation	13%	5%	-8%
Prod 2nd lactation	11,624 kg	12,560 kg	+936 kg
Treated mastitis 2nd	18%	15%	-3%

Produce bulls to VikingGenetics

About 10% of all heifers in the herd have been genomically tested and the heifers they test are the ones with an interesting pedigree. It is mainly their breeding advisor, who selects which heifers to test. A few good bulls have come from this herd like VH Lemek (+39), VH Malcolm (+26) and VH Brisco (+33) and it seems like the advisory services work.

Genomic selection makes farmers save around **6 million Euro per year**

By Hans Stålhammar, R&D VikingGenetics

From 1.6 NTM units/year to 4.0 NTM units per year

For many years before the introduction of genomic selection, the genetic trend of Holstein and VikingRed was in average 1.6-1.7 NTM units per year. (Table 1 shows the average NTM for different categories of females). This information is collected from milk recording and contains data from all dairy cows in Sweden. To calculate the effect of the introduction of genomic selection, we can look at differences in NTM between older heifers and the pregnancies, the time span being approximately two years. For VikingRed the difference is (12.4 – 4.7) 7.7 NTM units and for Holstein it is 8.2 NTM units. On average, the genetic progress is 4.0 NTM units per year!

What does this mean?

The increase in genetic progress due to genomic selection is (4,0-1.7) 2.3 NTM units per year. What is this progress worth from a famer's point of view? One NTM-unit is worth 10 Euro per cow per year. There are approx. 265,000 cows in milk recording in Sweden. The value of the introduction of genomic selection is therefore (2,3 x 10 x 265,000) = 6 million Euros per year. Remember that the genetic progress is additive and therefore this year's progress can be added to previous years' progress. ●

Table 1. Average NTM on different categories. From milk recording in Sweden, March 2016

Breed	Active cows	Old heifers	Young heifers	Pregnancies
VikingRed	0.8	4.7	9.7	12.4
Holstein	1.7	2.8	8.0	11.0

Increase of milk production due to genetics

Milk production has increased over time. But how much has to do with better genetics? A simple look at the statistics from milk recording in Sweden shows that it is quite a lot!

By comparing the milk yield index as a measurement, it can be shown as below. Of course, there is a time span from the birth year of an animal and when it starts to milk, but this is not significant because it is the relative value we are looking at.

A calculation from the real world

We assume that we have a bull with milk yield index 110, and that bull will give daughters that produce 160 kg more than average, which means 32 kg milk per index unit.

Table 1. Difference in milk yield in Holstein and VikingRed 1995-2014

	Holstein	VikingRed
Average yield, kg ECM 1995	8253	8004
Average yield, kg ECM 2014	10,065	9352
Difference, kg	+1812	+1348

Table 2. Difference in milk yield index in Holstein and VikingRed 1995-2014

	Holstein	VikingRed
Average yield, kg ECM 1995	69.4	75.6
Average yield, kg ECM 2014	98.8	103.3
Difference, kg	+29.4	+27.7

Holstein

The genetic trend for 19 years has been 29.4 index units. If we take this 29.4 index and multiply it for 32 kg milk per index unit we have 941 kg as a direct result of higher milk production due to improved genetics. That means that (941/1812) 52% of the improvement is due to improved genetics.

VikingRed

The same occurs with VikingRed. When we multiply 27.7 x 32 that is 886 kg ECM higher production due to improved genetics. 886/1348= 66% of the increase in milk production is due to better genetics.

These figures show that there has been a potential, genetic progress in milk yield in Sweden and it will be even faster in the future. ●

Genomic breeding predicts milk production better than pedigree index

By Christian Bengtsson, master thesis at VikingGenetics

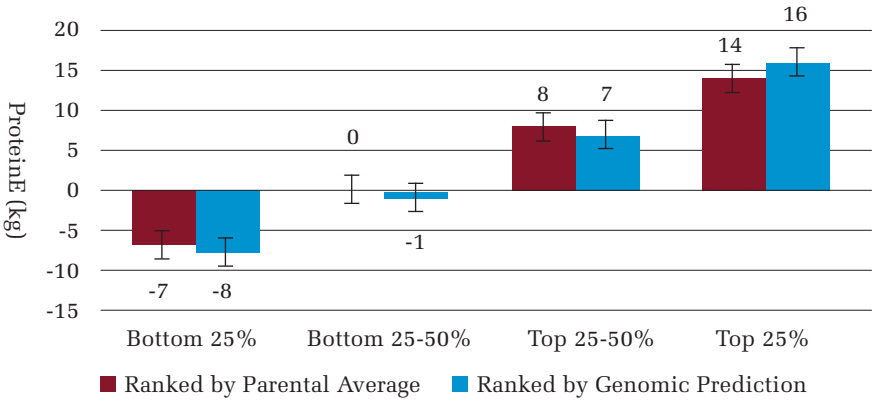
In his master thesis, Agronomist Christian Bengtsson shows that genomic breeding values for VikingRed in Sweden predict their future milk production better than a pedigree index.

A total of 10,000 heifers were included in the studies and they were divided into four groups. The first group with the 25% lowest index for protein yield and fourth groups with the 25% highest index for protein yield. (Figure 1 shows the average in protein yield for the four groups).

The red bars show average for heifers based on pedigree index one year before calving and the blue bars show average for heifers based on genomic indexes before calving. For heifers sorted on pedigree information, the difference in protein yield between highest and lowest group was 21 kg. Corresponding figure for heifers sorted on genomic values was slightly bigger, 24 kg.

Figure 1 clearly shows that the higher the index in the group before calving, the higher protein production they got during first lactation. The genomic breeding value was also better in predicting the future protein yield than pedigree index. The result was the same also for milk yield, where the difference between highest and lowest 25% was 583 kg. Corresponding figure for fat yield was 34 kg.

Figure 1. Correlation between milk yeld index and protein yield



Average for protein yield for 2488 VikingRed cows divided into quarters based on pedigree index one year before calving or genomic breeding values just before calving.

Basically, the study was based on genomic tests made before 2014. After August 2014, the reliability of the genomic breeding values has increased significantly due to females in the reference population, and the difference between groups is even higher today.

Data from the LD-project*

The data in this article is from all DNA-tested VikingRed heifers included in the LD-project. In the study are about 10,000 DNA-tested females of which 2,600 also have results from milk production in first lactation. The genomic breeding value before calving has been compared to production during first lactation. The genomic values have also been compared with the heifer's pedigree index one year before calving. ●

**LD-project= subsidies from VikingGenetics to do genomic test of all females in a herd.*

El Trébol – the success story of Red dairy breed in Colombia

By VikingGenetics based on text by Felipe Calderón, owner of the El Trébol, and President of the Ayrshire Breeders' Association of Colombia.

The El Trébol farm is located very near Bogotá, the capital of Colombia, with an altitude of 2700 meters above sea level. The owner is Felipe Calderón, who bought the farm in 1977. This is a story of how VikingRed breed was first introduced in Colombia.

Felipe Calderón is the owner of El Trébol and always wanted to buy a farm with something different from the traditional breeds existing in Colombia by the 70´s. He started to look out of the Colombian borders and found the breed he was looking for in Canada in 1986; the Ayrshire breed.

In 1996, Calderón participated in the World Ayrshire Congress where he heard about the Swedish Red Breed (SRB). The refreshment of the blood was very important for the Ayrshire breed in Colombia, because the inbreeding was already producing weak animals and the results with SRB are magnificent.

Always go for the best VikingRed bulls

Felipe Calderon chose T Bruno, B Jurist, Peterslund, Torpane and Orraryd and he could see the benefits quickly because the first daughters of these bulls gave much more milk than their mothers and improved feet&legs and strength a lot. They also had a perfect size for moving across the steep mountain pastures and black hooves are very important for the hot lands and the humid tropical areas.

VikingRed are today well-known in the cattle shows in Colombia. Calderon explains that a great satisfaction was to have the Grand Champion for crosses two years ago with his cow Uva Nueva (a crossbred Gyr (a Zebu breed) x VikingRed). She won the milk championship, best udder and Grand Champion titles. In Agroexpo 2015 the Grand Champion was a daughter by A Linné born in El Trébol.

High production

There are 55 cows in El Trébol, milking three times a day with an average of more than 9000 kg milk per cow/year, which is above average of the country. VikingRed works really well with high production, high solids, good longevity and good type and udders.

A good amount of the VikingRed semen sold goes to crossbreeding in Holstein farms and Zebu farms. "And it works really well", he explains.

The new Holstein herd that Felipe has bought to make a show window herd for VikingHolstein

"I have rented a new farm for my heifers, and in order to rent the farm land, I had to buy the Holstein herd residing there. I have decided to continue with the Holstein breed and use VikingHolstein to improve health traits, reduce the size of the cows and improve the solids", says Felipe who by now is planning to have a show window herd for the VikingHolstein, similar to the VikingRed show window herd in El Trébol.

Facts of the farm:

El Trébol is located in a small and steep property in a land that has an average quality but generally very rainy. Earlier the average rain fall of the area was 1500 mm per year, but now because of global warming it rains more than 2500 mm per year.

El Trébol uses V Föske, Pell-Pers, Uudin, Valpas, Tosikko, Turandot and Gunnarstorp and Tuomi. They produce embryos by flushing with sexed semen from Pell-Pers, A Linné, V Föske and R Facet.

Uva nueva was the best crossbred cow in Colombia in 2013. Felipe Calderon (5th from the right) is the owner of the El Trébol farm

Cross breeding with VikingRed helps Argentine farmers lower production costs

By Elisabeth Avendaño, VikingRed distributor in Argentina

The international over-production of milk and the consequent fall in prices are threatening dairy farmers all over the world. Argentina is of course not an exception, but its farmers are starting to see the advantage of crossbreeding their herd with VikingRed bulls.

In the last years with a very high international price for soya beans, many dairy farmers in Argentina have chosen to "intensify" production by keeping their cows in pens or even constructing free-stalls (California style) in order to freeing their land for agriculture. This would enable them to export soya beans, but also means a huge increase of use of grain and soya in the diet of their cows.

This decision results in an important increase in milk production, but farmers find it difficult to get a milk price that covers production costs. In a more intensive system, there are also often increased problems related to cow fertility, udder health, hoof health and so often a decrease in longevity, when cows are kept in pens.

However as in every business when the financial situation is hard, you need to look at the costs. Nowadays, more and more farmers are looking at the costs and realizing that by crossing Holsteins with VikingRed bulls, they are able to reduce "the hidden costs" like poor health. In the current situation all over the world, you cannot avoid to face these problems because it is important for the final profitability of a farm, and farmers in Argentina are now waking up to this fact.

ProCROSS is increasing

There is a growing interest to try the ProCROSS concept in several regions and farmers are thrilled with the productions, the improved fertility, the vigor of the newborns, the strong feet and legs of the cows and the great adaptability to grazing conditions of the offspring of the Montbeliarde as well as the VikingRed bulls. The great advantage is the very easy calvings, transmitted by the VikingRed bulls. ●

Facts:

Elizabeth Avendaño, VikingRed distributor in Argentina, have found that VikingRed gives healthy daughters which are problem free and long lived, with excellent productions well above average in their pasture-conditions with little grain or concentrates.

Two daughters by Ladö.

Double the speed with embryos

By Riina Koivulahti, VikingGenetics

In 2004 when Markku Aspila participated in a breeding course in Northern Savo, he heard people telling that embryo transfer will double the speed of genetic progress in the herd. He was a bit sceptic but decided to try some embryos too. Today he can agree what he heard over 10 years ago.

Markku is breeding a 40-head Holstein herd in Pälkäne in Finland with his wife Taina and son Hannu. Hannu's fiancée Miia Salin is soon finishing her studies in agricultural school and works currently as a part time relief worker for other farms nearby. The Vimmu farm has been in the family for 100 years now, and the average production is 10,297 kg milk with 3.9% fat and 3.3% protein.

During the last 10 years there has been many embryos bought and some flushes done in Vimmu herd. Markku and Taina bought three Asmo embryos from a D Ole heifer called Illanvarjo. She had the highest genomic test in Finland at that time for NTM. They got two heifer calves, Asmo Kouvotar and Kuutar by VH Miracle. "One of those three embryos was a third class embryo and we got that for free. We don't remember if that embryo gave a pregnancy, but we have said that it is Kouvotar that didn't cost us a penny" Markku laughs.

Even though Kouvotar would have been a 1st class embryo, she sure is worth it. She is genomically tested with gNTM +33. She was flushed as a heifer with Casual and a bull calf was born in September 2015. Today the bull is called VH Catrus and he is in Hollola station waiting to get old enough to have his proof published and start semen production. His dam, Kouvotar, has now been in milk about five months and already produces over 5700 kg milk with 4.5% fat and 3.4% protein.

The pregnancy rate for embryos has been good in the herd, around 70-80%. They also have been really lucky with the born calves as about 75% of those were heifers.

Follow the latest technology

When breeding advisor from Faba comes to the farm, it is Miia, who pulls on her overalls and goes to the barn. "We go through the cows and discuss breeding goals together" says Miia. "Then it is up to the breeding advisor to decide the bulls we will use. I'm not that interested in indexes that I would go through all the bulls" she continues. The cooperation with the breeding advisor seems to work perfectly. For the AI (Artificial Insemination), they use Faba's AI technicians.

VH Catrus – born at Vimmu farm. Here he is at the Hollola station in Finland, waiting to grow big enough to start semen production.

All heifers are being genomically tested. In January, they started to use the DNA ear tags and that made taking out genomic tests much easier. "We are looking for an easy cow that milks a lot. The udder conformation is also important" Miia says and summarizes their breeding goal. "About 10 years ago we had problems with feet and legs. Then we gave that high priority in selection and today we can say we have no problems with feet and legs," says Markku.

What will the future bring?

The future for the herd is guaranteed. Hannu will continue farming with Miia. "They can take over in one year when we will get the golden medal for producing 1st class milk for 25 years", says Taina laughing. Miia and Hannu have a clear view for the future: A new barn with two milking robots is already in their plans. Miia also wants to have VikingRed and maybe some other breeds in the herd too. "We just love to work with cows", Miia smiles. ●

The dam to VH Catrus and her proud owners; Markku, his wife Taina, their son Hannu and his fiancée Miia.

Farmers of the year in Australia 2015 uses VikingRed

By Darren Fletcher, VikingGenetics breeding advisor in Australia

Toby, Lyn and Nick Leppin milk about 380 cows, mainly VikingRed cows in Bena in South Gippsland, Australia. They have used VikingRed for more than 30 years, when the first VikingRed (Swedish Red) bulls came to Australia. At that time, the Leppins were searching for a cow that was able to produce milk with high solids from a predominantly grass based production system, and the VikingRed was the best choice.

Having just been named the "2015 Australian Dairy Farmers of the year", the Leppins understand that a continued focus on profitable production is needed to drive their business to the next level. Their herd must continue to set high production standards with low costs.

The Leppins run a seasonal calving herd, starting to calve in mid-July and running for about 14 weeks. One trait they found attractive was the calving ease of the breed, because time not spent in the calving paddock is important to them as the farm is run with a minimum of labour force.

The fertility of their VikingRed cows is another stand out feature of the breed. Last season they were able to achieve a three week in calf rate of 76%, with an overall empty rate of about 9%. These outstanding results are achieved using only Artificial Insemination (AI).

Low incidence of mastitis

All health traits that are included in NTM are important to the family as the rotary dairy is run as a single person operation for a part of the year. "Cows with mastitis are expensive and we like to keep our costs as low as possible" says Nick, who is about to start share farming on the farm. ●

Nick Leppin with his VikingRed cows.

VikingRed makes their stamp in Australia

By Erik Thompson, VikingGenetics Australia

Daryl and Coral Riley, along with their daughter Nicole, run a herd of Red cows in the North West of Victoria, Australia. Here they milk 120 "Aussie Red" cows. It is a well-organised and managed business with everything in place for a tidy operation.

The Riley's 120 cows are from an Ayshire base, and last twenty years, they have been using VikingReds. Some older cows are by Torpane 882, B Jurist, Orraryd and Larsgard cows, and the younger cattle consist of V Foske, G Edbo, Tosikko and many other sires. "I like the Viking sires because of the depth of information provided," says Daryl.

Good temperament and high production

The Riley herd consists of strong cows with great feet & legs and good udders. The temperament is exceptional as Daryl can walk up to any cow in the herd and put his arm around her neck. "We love our easy care cows. Health problems and poor fertility are all at a minimum", says Daryl.

The herd average is 7043 kg milk, 3.4% protein and 4.2% fat. Somatic cell count is generally below 100,000 and stays well at a premium.

The Rileys will build their operation up to 180 cows in the future and they look very well set to successfully expand into the future. ●

NEWS FROM MARKETING

A few photos from Instagram using #vikinggenetics

@evaiholma Jerseys in sunset #holmalantbruk #minlandsbygd #livetpålandet #cows #vikinggenetics

@heisala_antte @vikinggeneticsoffcial Matilda is very pleased with her new "pipo" #heisaladairy-researchcenter #bondenbehövs #vikinggenetics

@magnusikomalen Cows in the woods #vikingred #vikingholstein #vikinggenetics #holsteincow

@ole_k_saterbo #norgetrengerbonden #tinebonde #jerseykalv #jerseyheifer #jerseycow #viking-genetics #jerseycalf

From pure Holsteins to mixed herd

By Seppo Niskanen, VikingGenetics

David Foot Limited owns three dairy herds in Dorset, southern UK. The family-owned business milks about 900 cows in total. Until 2015 they had only Holsteins, but then they started to think of other possibilities.

When the herd needed more cows, the managers looked for something different that could complement the production, and VikingJersey was the right solution. "We had lot of food for our cows in 2015, so we decided to buy more cows," laughs Sam Foot, manager of the herd. They went to Denmark and imported 130 milking cows along with some pregnant heifers and younger heifers from three different herds.

The installations suited perfectly for the Jerseys. "In 2014 we built a new barn for 400 Holsteins, because the old one was too small for our Holstein cows and suit perfect for the Jerseys" explains Sam. Sam and his herd managers, John and Eddie, like both the Holstein and Jersey breeds.

Danish imports at D Foot Ltd, Dorset

Perfect complement

The plan is to keep both breeds pure in the future. Holsteins give milk volume, Jerseys give components. The business has put lot of weight on health and fertility traits into their Holstein breeding for ten years and the results can be clearly seen; a herd of harmonic, strong cows. As the Jersey cows have Danish pedigrees, they will continue using VikingGenetics. Sexed semen for the best cows and heifers meanwhile the remaining cows will be inseminated with beef.

They are also satisfied with the program VikMate, which guarantees and protects against inbreeding and they use both genomic and daughter proven sires. ●

Roger Trewhella from ABA Viking talking about the plans for the herd with Sam Foot and Eddie Simpson.

Crossbreeding in Canada getting popular

By Seppo Niskanen, Export manager, VikingGenetics

VikingGenetics' Red bulls are well appreciated in two Canadians herds which run crossbreeding using VikingRed to improve the cattle.

The goal was to get good longevity and easy calving and Corjan and Sandra Doornenbal, who moved from the Netherlands to Ontario, Canada, almost 15 years ago opened for a crossbred herd and today they milk about 180 cows. When they started, they had a pure Holstein herd but Corjan started to use some Swedish Red bulls like Orraryd and A Linné. Now the oldest Swedish cows are in their sixth lactation, and Corjan and Sandra are very happy with them.

"The production level is good, calvings are easy and the cows have good conformation", Corjan says. At this moment, the best crossbred cows in the herd are Orraryd and A Linné daughters. There are many VR Cigar and Buckarby daughters among heifers and they look very promising.

Many daughters by Gunnarstorp

Dave and Anneke De Boer milk about 120 cows in Ontario, Canada. Dave started crossbreeding almost ten years ago after his father visited Sweden and saw red cows there. Dave started to use Gunnarstorp in his herd years ago and there are still many daughters on the farm. They have good longevity and look very good. Orraryd daughters have done the same. The best cow in the herd is a Peterslund daughter, in fourth lactation. The cow had twin calves last time but no problems and she is pregnant again. "She is the best cow in the herd and produces more than 50 kg milk per day now.", says Dave. ●

Pieter Schuurmans from CRV Canada and Dave De Boer with crossbred heifers.

Chilean cheese made of VikingRed milk

By Suvi Johansen, Export Manager, VikingGenetics

Domingo Ursua owns the farm Fundo Hueñauca, in Southern Chile. He milks around 300 Red cows in a grazing management and he has just established a cheese factory. Around 10% of the milk is converted to cheese, but the goal is to process 100%.

Average production of the herd is 8145 kg milk with 4.0% fat and 3.5% protein. Ursua raises his own heifers, produces cheese and is establishing a sales network to sell it in bakeries and small delicacy shops in the area.

Ursua explains that the cheese called "Alimentos Hueñauca", is made of milk from VikingRed cows fed on pasture and the milk is rich with conjugated linoleic acid. The protein of the milk has a good level of cappa casein, which has a positive effect on the cheese yield.

Domingo Ursua started to use VikingRed in 1998, and VikingRed was the perfect option to reduce the size of the cows and maintain the milk production level. ●

“We trust NTM and the genomic test results”

By Ritva Hilpelä-Lallukka, VikingRed sire analyst, VikingGenetics

Yli-Räihälä farm in Finland has been part of the LD-project* right from the start. Pekka and Päivi Nuorala did the genomic tests for heifer calves born out of embryos already before the LD-project and tested bull calves that VikingGenetics was interested in.

Yli-Räihälä is an excellent example of cooperation with VikingGenetics breeding programs. They have bought embryos and they have high index females that are inseminated with sire of sons or flushed on a contract and they sell heifers to VikingEmbryo program.

”We started to do genomic test because of the embryo flushes because we wanted to know the genomic breeding values of the heifers” Pekka and Päivi say. 75% of the herd of 50 cows are VikingRed and the average production is over 10,000 kg. Pekka and Päivi are happy with their red cows, and they are determined to take the high production level even higher.

The circle closes in a nice way with the 3rd calver Ilo ET (Tosikko x Sale) who was bought as an embryo to the farm. Her first calf Kiva out of VR Cigar was inseminated with VR Florin, and that’s how the best daughter of VR Florin was born called Muru. Now this nice young Muru is bought to VikingGenetics in Hollola and is waiting to become old enough to be flushed.

Jackpot in bull calves

Päivi and Pekka hit the jackpot last summer when VikingGenetics bought two bull calves from them. First was VR Vaisto (VR Visio x VR Tornado) from a cow Kirsikka and right after him VR Esperi (VR Erkki x R Facet) from the dam of Kirsikka. Both boys have already been selected for semen production, so they have taken a big step in their career.

”We trust NTM and the genomic test results of younger animals. Good ones have been good, the lower have been average. Success with embryos and genomic testing have improved our herd a lot”, says Pekka. ●

*LD-project= subsidised genomic tests on all females in the farm.

RDC adjusts weights for yield and udder conformation in NTM

At the same time as including young stock survival in the Nordic Total Merit (NTM), The Red Dairy Cattle (RDC) is changing the weights for some other indices in NTM and weight on yield (from 0.96 to 1.00) and udder conformation (from 0.32 to 0.35) is increased slightly. The objective is to ensure that genetic progress for these traits is maintained when introducing young stock survival in NTM. The change has only limited effect on ranking of bulls.

All the current weights for different sub-indices in NTM and the correlations between NTM and sub-indices can be found on NAV web page (www.nordicebv.info) under NTM and breeding values/NTM.

Angler in Germany – A pilot project for cooperation

By Auli Himanen, VikingRed breed coordinator, VikingGenetics

The strategic aim for VikingRed (VR) has been to create stronger links to other red populations and Angler in Germany is one of them with 11,000 milk recorded cows.

Already today, there are 100 Angler daughter proven bulls included in the Red Dairy Cattle (RDC) reference population. In addition, 200 High Index Angler females were agreed to be tested in our reference group. The results are transformed to German RZG scale. The level of Angler bulls is a bit lower than VikingRed and the best females reach gNTM+20.

The status of the cooperation today is that Angler can test females and also bull calves on NTM-scale. The contract includes the opportunity of 50/50 ownership for Rinderzucht Schleswig-Holstein (RSH) and VikingGenetics (VG) for bulls that are tested and bought.

Angler will also have the possibility to join the Breed Association’s meeting in October 2016 organized by the VikingRed committee. ●

Peterslund – a hero of his time

By Hans Stålhammar and Auli Himanen, VikingGenetics

Peterslund produced more than 715,000 doses during his life and all of them were sold. He is the best-selling VikingRed bull ever. His semen was exported to 32 countries on six continents. His daughters have given him a very good reputation, and he has a high rank on the different Total Merit Indices around the globe. In his international yield proof, information from more than 60,000 daughters are included.

Peterslund was born in 1997 in Sweden and his sire is the internationally well-known bull, T Bruno. Peterslund can still compete well with younger daughter proven bulls. He is the VikingRed bull born before 2000 with the highest index on the Nordic Total Merit (NTM) scale. His popularity is based on the completeness of his proofs; he transmits good milk solids, easy calvings, excellent overall health and good conformation. In Canada, ranked on LPI, he is still second best bull with a Canadian daughter proof. In USA the NM$ is 532, in Australia the BPI is 150 and in United Kingdom the £LPI is 200.

Future generations

Peterslund was a Sire of Son before the genomic era, and the number of sons bought in Sweden, Finland and Denmark was huge compared to what Viking is purchasing today. Altogether 133 bull calves were bought and after strict screening, 48 sons started their AI career in Viking countries. The most successful son of Peterslund is Swedish-born Hällom, who has been used heavily in home market, but also promoted in various export countries. Hällom still has NTM +15.

Peterslund produced more than 715,000 doses and all the doses were sold. He is the best selling Red Dairy Cattle bull in VikingGenetics ever. His semen was exported to 32 countries on six continents.

Many of Peterslund's daughters became bull dams and he is the maternal grandsire of 153 AI bulls who started their career in Sweden, Finland and Denmark. One of the most interesting grandsons of Peterslund is VR Vimpula (sire Valpas), a genomic bull with gNTM +25 and the cow family behind him shows great longevity. Another influential grandson is Buckarby (sire O Brolin), who has been one of the most popular proven VikingRed bulls of recent years. Leroy, a Långbo son, is also worth mentioning. Peterslund will continue to have great impact of the Red Dairy Cattle breeding also in the future. ●

International impact

Canada

Peterlund was used in Canada a lot along with his sire T Bruno, and Peterslund is still #2 in the LPI ranking of proven Ayrshire bulls. Various sons from him were bought to Canadian AI, best being Hauptre Kansas and Hauptre Knockout.

Peterslund has three grandsons in the current top50 list of young genomic sires and various granddaughters in the list of elite cows. One of the best Canadian Ayrshire bulls today, Kamouraska Rockstar, is a grandson of Peterslund.

Australia

Peterslund has been one of the most popular bulls in Australia. He was the #1 on ABV (Australian Breeding values) in Australia in his active years. Today his BPI index is 150, based on 898 daughters in 116 herds. He still ranks among the very top bulls for fertility and survival in Australia.

Genetics Australia has currently four grandsons of Peterslund, waiting for their proofs.

US

In United States, Peterslund sold almost 150,000 doses but the majority of the doses were used in crossbreeding. Still, he has had influence on the American red population too, and a son of Peterlund is #2 of the active sire list of proven Ayrshire bulls. His US breeding value NM$ is 532.

Norway and Germany

Peterslund was also used in other red populations, like in Norway and Germany, where several sons have been bought for AI.

VIKINGHOLSTEIN

80 different flushing bulls in one year

By Claus Langdahl, breed coordinator VikingHolstein

When we select bulls to our flushing contracts, we want to use as many different as possible. We make a good mix of our own Viking bulls, but we are also using the best ones from other countries, based on the Nordic Total Merit (NTM) scale. The average NTM of the 80 bulls we have used last year is +34 in NTM, and that makes the next generation very promising.

It is still a wish not to flush the top heifers only with the top indexed bulls, but to use a wider range of all selected sires of sons in our line up so by using all recommended sire of sons, we make a better genetic progress. In table 1, you can see the bulls most used for flushings.

Table 1. Most used bulls in contracted flushings in VikingGenetics last year.

Bull	No. of flushings	gNTM
VH Sherman	12	+37
EV Jetset	12	+37
VH Broback	11	+44
VH Bolus	11	+39
VH Ramis	10	+37

Deciding on flushing bull three weeks before insemination

For most of the flushings we use doses from the very youngest bulls, to keep the generation interval as short as possible, to get the highest genetic progress and because owners of the heifers also want to have the first doses of a new top bull! Therefore, to have the newest bull, wait as long as you can before the flushing, to get the perfectly matched bull. ●

VH Broback (Balisto x VH Mandel).

Genetic defects in genomic era

By Lars Nielsen, Head of breeding, VikingGenetics

Genomic selection has come to stay to increase the genetic progress and at the same time, it gives us the ability to identify genetic defects with recessive inheritance.

Genetic disorders such as the Complex Vertebral Malformation (CVM) and Leukocyte Adhesion Deficiency (BLAD) have had significant economic impact on dairy cattle breeding worldwide. These well-known defects have been found in abnormal calves.

Drinking from an Australian creek

Recessive defects will only be visible when you have two defect genes (aa). Both humans and animals are carriers of a whole lot of recessive defects that we are not aware of, because if you have an Aa, you don't notice it.

With genomic selection we know a whole lot more – and if we find that we have an "Aa" gene, we can be sure that we also have the "aa" combination.

Therefore, it is very important to be able to evaluate the defect one by one and take decisions about how we will handle it in the best way, without compromising with ethics. If we want to extinct all defects that we have not been aware of until now, we are risking losing in genetic progress dramatically. ●

The Danish farm Smaakjærgård owns something very special

By Claus Langdahl, VikingHolstein breed coordinator, VikingGenetics

VH Gofeet (Mardi Gras x VH Grafit) with gNTM +41

VH Grafit cow no. 3170 from Smaakjærgård, is without any doubt the most successful cow in the whole VikingHolstein population. She has a strong pedigree with a dam by Rakuuna, which today has NTM +8. After that, we find bulls like D Olly (O-Man) and Lord Lily. Today cow no. 3170 has NTM +30.

In September 2013, she gave birth to her first and only calf. Her production was quite impressive for a Holstein cow with 5% fat and more than 4% protein. Conformation was 88 points.

The reason for her success is in the way she produces top bulls. VH Benzema (Balisto) and VH Gofeet (Mardi Gras) at NTM +39 and +41, respectively, and she also has a Rodger-son and a full brother to VH Gofeet, born a little later, ready to enter the barns at VikingGenetics. These four bulls have been found out of eight tested bulls from that cow so far. A success rate of 50% that others can only dream about.

She has been flushed seven times and has produced more than 40 embryos, so in that perspective she is just an ordinary flushing cow. Last time she was flushed with LouisPPRC (nine embryos), so there is a hope for also polled top genetics from her.

VH Benzema and VH Gofeet can be found on the daily plan as well as sire of son list and both of them has a really attractive profile without any big mistakes. ●

A dream is coming true

Some of you may remember an article in VikingNews two years ago with the headline; ”Genomic tests give a better overview of your herd”. Per Laursen at Tøndering, Denmark, explained how he looked at genomic tests of females and how he very successfully found many new heifers to flush. In the article Per says; ”The dream is to have a bull on the active list”. Now, that dream has come true!

Ever since then they have done flushings on many different cows, but one female has been in focus, the VH Osmus daughter no. 2711, that has been flushed three times and produced 37 embryos in total and so far 10 born calves. The last flushings in January this year with VH Storm, VH Sherman and VH Geller she produced 17 nice embryos. It is also from this VH Osmus cow, that still has NTM +29, that we find the first bull on the active list from the herd: VH Chacca (VH Clement) with NTM +36 and a fantastic profile with high components, good health profile and good fertility, nice udders and not too big – a modern Holstein profile, and this will probably be a bull that will be used on both home market as well as the rest of the world.

Already now, there are many good bulls on their way from the herd. VikingGenetics has just bought a VH Lot bull on a VH Rubak x VH Service heifer that also comes from a flushing. There are two born calves from that flushing, genomically tested bulls with different sires, VH Cedar and VH Lot. This shows that by using two different bulls on the insemination for the flush, can give you a big advantage!

The many ET-heifers that are born in the herd of course help increasing the genetic level on the herd. Today there are more than 12 females with more than +30 in NTM, where most of the offspring are from the VH Osmus daughter 2711 or from the VH Rubak x VH Service cow, two families where VG has bought bulls. Today Per is in the LD project, where all females in the herd are being tested and he is using the ear plier where you take the DNA at the same time as you put an ear tag in the calf. The dream of having a bull on the daily plan has come true and probably there will be a few more in the future. Breeding is going in the top gear in Per’s herd. ●

Facts

- Per Laursen
- Dairy producer, Salling, Denmark
- 100 Holstein cows
- Production: 12,000 kg ECM
- Breeding strategy: Focus on NTM and health and profitable cows

VIKINGHOLSTEIN

What if you select VikingHolsteins on TPI?

By Evgenij Telezhenko, "Zhenja", VikingGenetics

In the Nordic countries, we consider the Nordic Total Merit (NTM) as the best breeding goal in the world. People around the world tend to have different preferences and therefore use different breeding objectives, and for the Holstein breed, the TPI index seems to be the most known one.

NTM focus on health traits

Differently from NTM, where relative weights are defined by objective economical modelling, the Holstein Association in USA more subjectively define the weights in TPI. The NTM is a more complete total merit index with many unique traits, which are beyond the scope of TPI. Moreover, some components having similar names in TPI have much more data behind in NTM (such as fertility index). However, what happens when we start to select Holsteins from VikingGenetics using TPI?

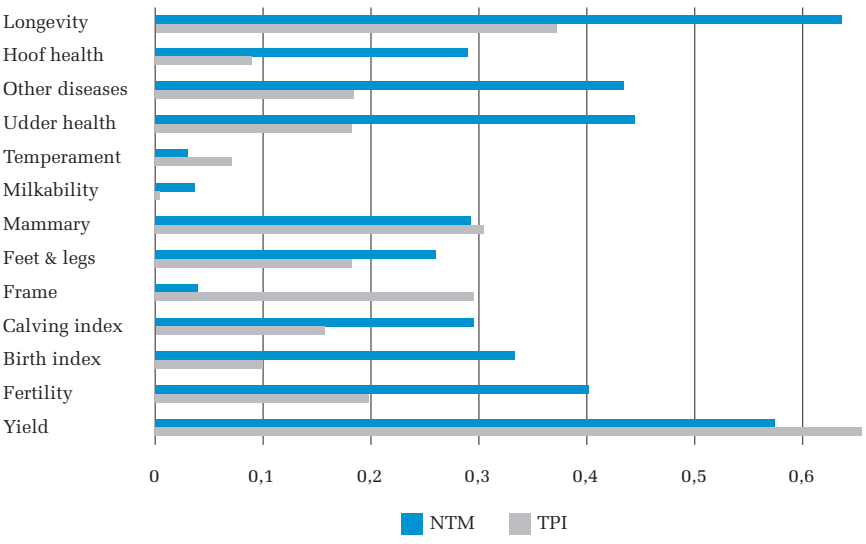
Selecting VikingHolsteins on TPI

We have analyzed correlations between Nordic EBVs (estimated breeding values) and TPI contra NTM for all VikingHolstein bulls born in Denmark, Sweden and Finland listed on www.dairybulls.com in December 2015, born 2008-2014, which resulted in 643 sires. The results of the correlation analysis could be interpreted as relative breeding progress for the Nordic EBVs if you select sires on TPI compared to NTM (Fig 1).

The results showed that VikingHolsteins chosen on TPI would have superior frame and somewhat higher production, but only slightly better mammary than those chosen by NTM. On the other hand, NTM provides much better progress for all health and fertility traits along with longevity. Better correlation of Feet and Legs (F&L) with NTM reflects that our F&L composite in VikingGenetics is not completely the same as it is defined in US.

Still all the traits have positive correlations with both total merit indices. That is because all the bulls are Viking bulls and were selected for NTM and therefore in general having good fertility and health. It is, however, a good illustration how considerably one will compromise on health and fertility without gaining much extra for production if selecting VikingHolsteins using TPI index. ●

Figure 1. Correlations of Nordic EBVs with TPI and NTM. 643 VG Holstein sires, born 2008-2014, listed on www.dairybulls.com (December 2015).



Dam of VH Ozze (Overbay x D Jul)

VJ Gislev

VJ Hihl x VJ Lure x Q Zik

The new Jersey production sire

VJ Gislev

VJ Gislev is a leader in production of milk solids and is currently on top of the VikingGenetics active sires list, and is one of several new VJ Hihl sons. VJ Gislev is bred by Klaus Ole Jørgensen, Denmark.

The dam is a very high-producing VJ Lure daughter. She has an average yearly production of 9219 kg milk, 563 kg fat and 406 kg protein and VJ Gislev has inherited some of these production abilities. Note the protein index of 124.

VJ Gislev breeds good frame, high stature, body capacity as well as very good udder health and longevity.

aAa: 342 Cappa Casein: BB Beta Casein: A2/A2 JH1 Free

VJ Dee

VJ Lappe x Q Hirse x FYN Lemvig

Highest components available

VJ Dee

VJ Dee is an outcross bull offering exceptionally high protein components. A new pedigree, without DJ Hulk genetics. The bull is bred in the Havdal Jersey herd, by Jørn Mikkelsen, Søften, Denmark.

The dam is "Havdal Hirse DeeDee", who also bred VJ Buzz (DJ Broiler son), soon to be daughter proven and sire of VJ Bihl and VJ Buffo. Further back in the maternal line you will find a number of other bulls in the VikingGenetics Jersey breeding program. The maternal line is well-known for exceptionally high components, over 4.6% protein. This is also reflected in VJ Dee's breeding values, where breeding value for fat components is 127, and the breeding value for protein components is 143 – highest in the Jersey breed. VJ Dee breeds daughters with good stature and body depth, good udders, super udder health, longevity, milking speed and temperament.

VJ Dee has cheese merit index of 388 in USA and breeding values of 0.5 and 0.2 on fat and protein components.

aAa: 345 Cappa Casein: BB Beta Casein: A2A2 JH1 Free

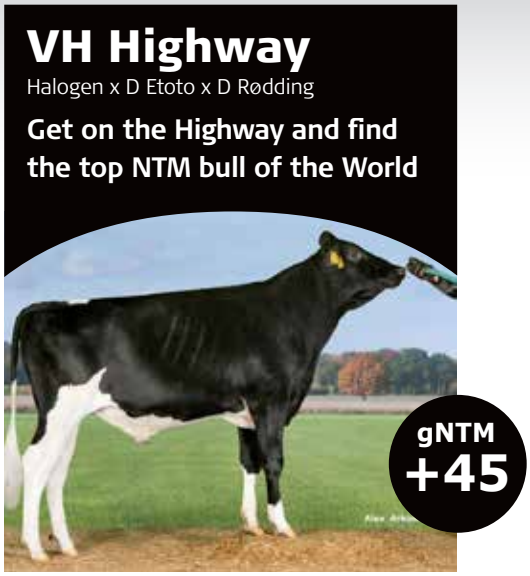
VJ Hihl sons dominating the top lists

Breed coordinator Peter Larson, VikingGenetics, judged the National Jersey Show in South Africa, April 2016.

The new proofs show that VJ Hihl sons are doing extremely well. VJ Hiwe is in the top of the list with impressive +30 gNTM, followed by VJ Gislev with +28 and VJ Gyvel with +22 gNTM. VJ Gislev and VJ Gyvel are on the active sires list. VJ Hiwe is still very young and just started semen production.

Genomic sires are totally dominating the top lists, and the domestic list consists only of genomic sires. 94% of all services are made with genomic sires, 5% with daughter proven sires and 1% is imported semen (genomic). Daughter proven sires are marketed on export markets as well as on the domestic market, if they rank high.

Sexed semen is becoming more and more popular. Two thirds of all Danish Jersey herds use X-Vik systematically and 27% of all heifers are inseminated with sexed semen. Most top bulls produce X-Vik and enable you to speed up the genetic progress even further.



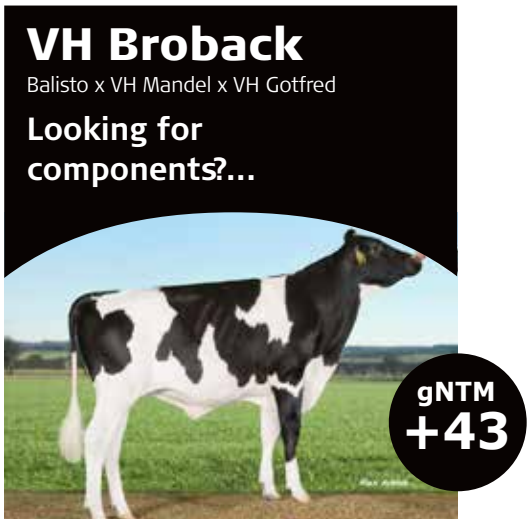
VH Highway

The top ranking Holstein bull in the World is called VH Highway. A Finnish born Halogen son, and the proud breeders are Sari and Reijo Korkatti. He is the first born offspring from a D Etoto cow that still today has impressive +35 in NTM after finishing the first lactation.

Granddam – a D Rødding daughter is classified VG85. This is a really strong production family and with that in mind the combination with Halogen was a smart choice. Halogen is a Petrone x Man-o-Man son and he can deliver everything except production where he is below average.

With an NTM at +45 it is obvious that there are many strong traits, just have a look at some of them; female fertility 131, maternal calving 122, udder health 116, general health 115, mammary 117 and even production at 118.

aAa: Cappa Casein: Beta Casein:



VH Broback

...here is a dam with more than 9% fat and protein in first lactation!

The top Balisto son from a 84 point VH Mandel daughter that as first calver produced close to 10,000 liters of milk with impressive 5.4% fat and 3.8% protein. From this VH Mandel we also find VH Octano (VH Odense) at +34 in gNTM. Further back in the pedigree is a super strong VH Gotfred (V Groovy x V Ersgard) – a cow from which VikingGenetics recently bought a VH Montee son. The breeder is Peter Dalgas Nissen from Kruså in the very southern part of Denmark. VH Broback gives the components – just like the dam, medium sized, strong, healthy animals, easy to work with.

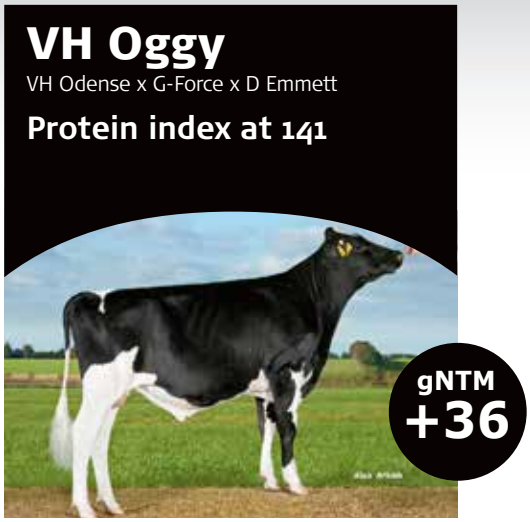
aAa: Cappa Casein: Beta Casein:

VH Benzema

On page 17 you can read about the VH Grafit daughter from Smaakjaergaard I/S in Denmark. A really remarkable accomplishment with VH Gofeet (Mardi Gras) at gNTM +41 and VH Benzema at gNTM +39.

VH Benzema is one of the best production bulls coming from both Balisto and VH Grafit, and then good old Rakuuna to bring in the health and fertility and to bring down the size of the animals. Besides from the good production, VH Benzema will give you calm animals with good conformation and health above average.

aAa: 423 Cappa Casein: BB Beta Casein: A1/A2

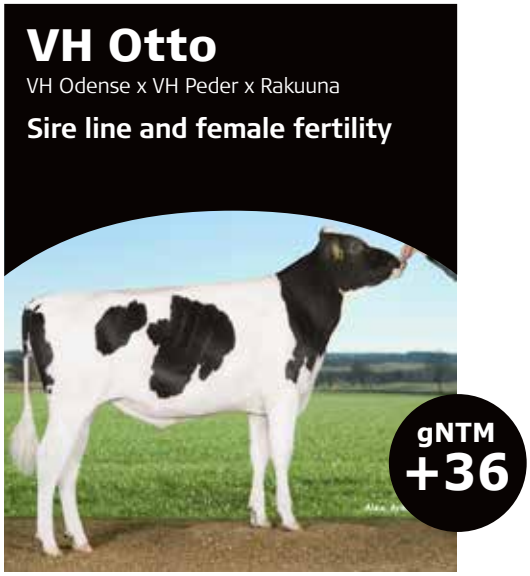


VH Oggy

VH Oggy is the strongest bull when it comes to protein components.

In first lactation, his dam reached an average of 4.8% fat and 3.8% protein. So it is easy to see where his good components come from! The dam is classified VG86. The breeder is Rasmus Kildal from Denmark. Besides the good components, you can expect medium sized cows with fertility above average and especially good hoof health.

aAa: Cappa Casein: BB Beta Casein: A2/A2



VH Otto

VH Otto is bred at Damsted I/S at Videbaek in Denmark. VH Peder, the MGS, is today the second highest daughter proven bull with NTM +25. His dam is a strong-producing 84 point cow, and her dam is likewise classified 84.

Again we find a VH Odense son with good components, medium size, but in this case also super female fertility (119) and health at a nice level. A bull that provides longliving cows!

aAa: 432 Cappa Casein: AB Beta Casein: A2/A2

Elly Geverink

VR Niki

Nora Prästgård x Peterslund x Kelli

A new, good, proven bull

VR Niki

VR Niki is a former top genomic bull. He was born in 2011 and now got his first progeny proof with more than 300 daughters in production traits. The progeny result shows that he is a real health profile sire with positive breeding values in all health traits.

VR Niki has two generations of high-producing cows in the family. In her best lactation, the dam milked 15,543 kg milk, 4.5% fat and 3.6% protein. MGD has produced more than 14,000 kg milk in her best lactation. Both have over 50,000 kg lifetime production. The breeders to VR Niki are Heikki and Tuula Kurkinen, Finland.

aAa: *Cappa Casein: AA* *Beta Casein: A2/A2*

VR Fenton

R Fastrup x Gunnarstorp x Orraryd

Rank No 2 in Interbull Red Dairy Cattle evaluation

VR Fenton

VR Fenton is not a proven bull in NAV (Nordic cattle genetic evaluation) but has that status in Interbull. This is due to different thresholds for reliability. The rank of VR Fenton is number 2 of all RDC bulls across countries. His dam is an embryo from donor station Viken in Sweden bought by Morten Hansen, Denmark.

In average, the dam has produced 10,836 kg milk, 4.2% fat and 3.6% protein in four lactations. Some of her daughters have flushing contracts with VikingGenetics in two generations. The dam of VR Fenton also has a fullsib in the herd and she is the dam of VR Edison and also the dam to a VR Porter heifer bought to VikingEmbryo program.

VR Fenton is a good production sire with very good fertility as well. Daughters are slightly smaller than average with very good set of legs and rear udders.

aAa: *Cappa Casein:* *Beta Casein:*

VR Grolle

VR Grant x Hällom x R Facet

VR Grolle; top of VR sires with gNTM +33

VR Grolle

VR Grolle took the #1 position among VR sires in May 2016 evaluation. He was born at Martin and Pia Berglund, Sweden.

His dam, 123 Yrva, is a highly genomically tested female out of Hällom. She has calved twice with a calving interval less than 11 months. During the last 12 months, she has produced 10,829 kg ECM and her conformation score is 82-84-85-85. MGD was a nice R Facet cow who calved three times and produced 10,991 kg ECM in average per year with score 82-86-81-83. The GMGD was an Orraryd cow who calved five times and produced 11,543 kg ECM in average. The herd does genomic test of all born female calves. Lately a heifer, out of VR Auror, with gNTM +30 was sold to VikingEmbryo project and has been flushed at VG facility in Skara.

VR Grolle is a good production sire with positive daughter fertility. He breeds great udder health and fast milking speed, and longevity index is 120! He breeds average for size, great feet and legs with tremendous bone quality and good mammary.

aAa: *Cappa Casein: AE* *Beta Casein: A1/A2*

VR Hjusticia

VR Hammer x VR Vret x Gunnarstorp

20,000 doses sold on home market

VR Hjusticia

VR Hjusticia has been on top among VR sires a long time now. He is the best son out of VR Hammer and he was born at Karl-Gustav Karlsson, Galltorp, Sweden. His dam is a tall cow, 150 cm, with excellent udder and average production of 11,577 kg ECM. The grand dam is still in the herd and has an average production of almost 11,000 kg ECM.

VR Hjusticia is a high component sire with fat component index of 115 and protein component index 124. He breeds easy calvings combined with healthy and functional daughters. He is also on top in feet and legs as well as in udder conformation.

aAa: *Cappa Casein: AA* *Beta Casein: A1/A2*

VR Rafael

VR Rankin x G Edbo X R David

Proven pedigree

VR Rafael

VR Rafael, a new sire from the most successful VR cow since the introduction of genomic selection.

This G Edbo cow has been the highest tested female across countries. First, she gave us VR Felipe and VR Faber, two bulls out of VR Fimbe, and later VR Barkov and VR Bruhn out of VR Borsse. They have all been on the daily plan in VikingGenetics. Now we have two full sibs out of VR Rankin, VR Rafael gNTM +28 and VR Rune gNTM+27 who were bought to Sweden as embryos. The G Edbo cow has been flushed eight times and given altogether 31 calves.

VR Rafael is a good production sire who breeds easy calvings and top functional cows. He inherits average size daughters combined with great bone quality and fore udder attachments. The breeder is Morten Hansen, Denmark.

aAa: 243 *Cappa Casein: AE* *Beta Casein: A1/A1*

Cost cutting cows

When milk price is low, it is important to cut costs, but in the right way.

By choosing VikingGenetics you will always be making the most profitable choice; Healthy cows and high production. An everyday solution that works!

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