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NO 03 / SEPTEMBER 2016

HEALTH TRAITS

TRUSTING EMBRYOS

GenVik Test

VIKRANK

ProCROSS

“The bulls we have in the barns are the best choice for a farmer to optimize his profit”

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By Sara Wiklert Petersson,
Head of Sales, VikingGenetics

VikingGenetics is too modest

The other day, I once again came across the proof in real life of the importance of our breeding in VikingGenetics. One of the health problems causing most hassle in United States dairy production is the "hairy foot wart" – also known as digital dermatitis. It is a painful disease that not only makes cows suffer, but causes a loss in the production and a negative impact on fertility. This is one of the traits that we can take into account when breeding and one of the important traits in our hoof health index.

We have many bulls, for example VH Clark, who reduces the frequency of digital dermatitis to half of the normal. That is a lot of pain saved there! And that's why I really agree with our CEO, Rex A. Clausager, in the interview on pages 8-9 in this issue of VikingNews, when he mentions that: "We are too modest compared to other companies that say that they have breakthroughs and have a new technology".

Breeding for health traits to guarantee the profit is something that VikingGenetics has done for more than 30 years; we have all data to support the advances in this area, but we have been too modest to communicate this clearly.

I encourage you to take a second look at the hoof health index; it can really cut some costs in your herds!

In this issue of VikingNews, you can also read about herds from around the world enjoying the benefits of the Viking breeding. Read the whole interview with our CEO, Rex A. Clausager, from which I also remark a quote that describes our team. "At VikingGenetics, we have a passion for what we do; everyone knows that what they do is important." To tie it together, it is fun to actually have one piece of the solution for the dairy farmer – it is possible to breed for healthier cows – and at Viking we know that. We have done it for 30 years and we will continue doing it every day.

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LAYOUT AND PRODUCTION: vahle*nikolaisen.

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

COVER PHOTO: CEO Rex A. Clausager likes to go to the barns to see the bulls whenever possible.

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GenVik Test – An excellent tool to choose dams for next generation

By Lars Nielsen, head of breeding in VikingGenetics

When a dairy farmer genomically tests all heifers in the herd, he obtains several advantages by improving the selection of the best female animals for Embryo Transfer (ET) or/and usage of X-Vik (sexed semen) and also knowing what heifers not to focus on.

Today it is possible to get heifers genomically tested on the most reliable scale in international cattle breeding, the Nordic Total Merit (NTM), known as the world leader for health, fertility, and profitable cows.

GenVik Test is the perfect tool for successful dairy producers because it is providing practical knowledge about the individual animal. A farmer can now range its herd with an outstanding grade of confidence and therefore make important decisions based on scientific data. They can select the best females for ET (Embryo Transfer) or X-Vik semen (sexed semen), select the poorest heifers for insemination with beef semen or choose cows for sale. Farmers can also test for documentation of the animal pedigree.

GenVik Test is available for Holstein, Jersey and VikingRed, and the results come as a full package on all evaluated traits from NTM, with a monthly update on your tested females, sent directly to your email during three years.

The GenVik Test is based on genetic evaluation from the most reliable reference groups both from bulls and cows. The proven Nordic bulls in the reference group have indices based on big daughter groups and highly reliable field records. The reference females origin from herds with superior quality registrations.

Table 1: Present reference groups, no. of animals.

	Reference population	
	Daughter proven bulls	Cows
Holstein	31,800	14,900
VikingRed	7,600	19,600
Jersey	2,500	13,500

How to order:

Prices:

- 40 Euro (genotype + pedigree info)
- 65 Euro (DNA sample + pedigree info)

You can have a discount of 5% when you order more than 25 tests at a time.

To make an order and get instructions, send an email to: GenVik@VikingGenetics.com

New tool – Customized Ranking, **VIKRANK**

VikingGenetics is proud to present VIKRANK, a new tool that will make it easy to choose the bulls that will match your goals. The tool is suitable to use from different devices such as tablets, PC, and smartphones.

This new tool from VikingGenetics is designed to help farmers around the world to choose the bulls for their herd based on their wishes and breeding goals. VIKRANK is a user-friendly tool that allows you to have your own list of your favorite bulls. There are seven groups of bulls and they are all on the top Nordic Total Merit (NTM) list from VikingGenetics. Below are the seven groups of bulls:

The bulls ranked high on GRAZEVIK are superior in traits important for a profitable pasture-based milk production. Additional attention is on traits such as daughter fertility, calving ease and hoof health. A premium is also given to bulls breeding high components of fat and protein in the milk.

This concept is targeting trouble-free and healthy cows. Bulls with a high rank on HEALTHVIK breed advantage in mastitis resistance and resistance to other diseases, as well as a good hoof health. The proof of other diseases includes information on disorders expressed early and late in lactation, metabolic disorders and hoof treatments.

Bulls superior in ROBOVIK give daughters suited to be milked by robots. Milk flow, resistance against mastitis and good hoof health are traits given special attention. A bonus is given to bulls breeding increased fat and protein components in the milk. Also, udder balance and the distance between rear teats are taken into account.

Bulls ranked high on YIELDVIK breed positive proofs for traits important for a healthy cow with a high milk production. Traits with a particular interest are milk yield, resistance against mastitis and udder conformation.

The CHEESEVIK concept is targeting traits that are essential for a profitable cheese production. Bulls ranked high on CHEESEVIK inherit advantage in yield, udder conformation and resistance against mastitis. A premium is also given to a bull if he inherits high components and if the bull is a carrier of the B-variant of Kappa Casein.

The scope of FERTIVIK is to improve the genetic level of female fertility in the herd. Bulls ranked high in FERTIVIK have an additional focus on female fertility and hoof health.

Indirect measures of feed efficiency are used to rank the bulls on the EFFICIENCYVIK concept. Improved production and a restriction of the cow size measures are used to distinguish the bulls. Particular attention is also taken to bulls that breed improved fat and protein content in the milk.

VIKRANK will in the first phase only be available for the distributors, so if you are interested, please contact your nearest distributor who you can find at www.vikinggenetics.com/contact ●

VIKRANK is a user-friendly tool that allows you to have your own list of your favorite bulls.

Health traits becoming **an international trend**

By Camilla Rosman, Marketing manager, VikingGenetics

We all know that health traits have been an integrated part of VikingGenetics' breeding efforts since late 80's and it is the trademark of VikingGenetics' breeding program. The secret behind the Nordic farmers' success is their willingness to register all traits including health. Farmers in the Nordic countries are fully committed to the registration system as they use it for managing and breeding in their herds.

A strong point in the Nordic countries is that farmers play an important role in the definition of the breeding goal. No other countries in the world have the same tradition as we have and therefore the Nordic health profile is unique.

It is so easy; a healthy cow, with strong feet, can walk easily, eat a lot, and produce a lot of milk. In addition, a healthy cow does not need much attention from the owner. Invisible cows make life much easier for the owner.

Although, the challenge with health is that those registrations are difficult to measure objectively like milk yield and conformation. Therefore, much effort has been put into standardizing the definition and recording of diseases, and veterinarians, hoof trimmers and farmers have been well educated.

The dairy production in the world has understood this, and in March 2016, the privately owned animal health company Zoetis launched Clarified Plus to offer dairy farmers and AI companies a genomic test on health traits to select Holstein females within the herd and bulls for the AI company. The launching of Clarified Plus is a sign of this international interest in health characteristics. Zoetis has developed a genomic prediction for health traits based on production records assembled from farm data from commercial US dairies. There are six traits that Zoetis is evaluating and selling and these are: mastitis, lameness, metritis, retained placenta, displaced abomasum and ketosis.

The Nordic health profile is far ahead

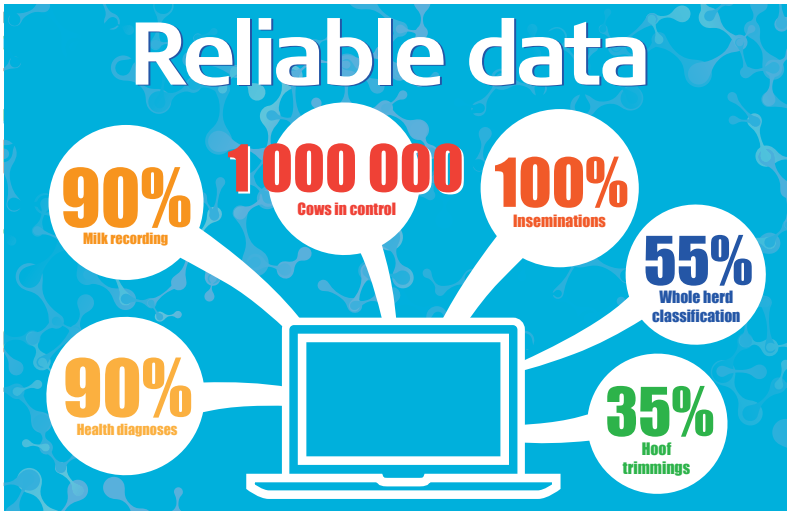
In the Nordic countries, the trait **Mastitis resistance index**, has extensive veterinarian registrations of clinical mastitis as the main source. Registrations are done for all cows on all farms and are official. On top of that, we also include data on somatic cell score, for udder attachment and udder depth that we also know affect the mastitis resistance. This is much more information than anyone else offers.

Lameness is one of the most painful diseases for a cow and a costly disease for a farmer. The Nordic countries present a breeding value for **Hoof Health**, based on official reports from hoof trimmers where they classify each individual hoof for eight different disorders. Lameness, as Zoetis is selling, is only the symptom of a hoof disorder. By getting to the direct cause, registration of hoof disorders is needed.

Since mid-80's, bulls from Denmark, Finland and Sweden have had a breeding value called **Other Diseases**, based on official veterinarian treatments classified into four different groups; feet and leg problems, metabolic diseases, early reproductive disorders and late reproductive disorders.

We can state that there are more diagnoses listed in the health traits we use in VikingGenetics than in the case of Clarified Plus and the knowledge we have in the Nordic countries of breeding for health traits is a valuable treasure for the farmers. ●

The milk recording system in the Nordic countries is highly developed and 90% of the cows participate in the registration of health traits. This is official data and gives you as a farmer reliable breeding values.



ProCROSS – the only proven cross **breeding concept in the world**

By Veronica Löfgren, Communicator VikingGenetics

To be able to define an efficient strategy for your herd requires not only inspiration but also thinking out of the box. Opening your mind can mean success in your breeding plan when you transform possibilities into economic success.

In 2007, researchers at the University of Minnesota started a crossbreeding study analyzing data of the crossbred and purebred cows on eight dairy farms in The United States of America (USA). These dairy producers were disappointed with the health, fertility, and survival of their pure Holstein cows.

The combination of VikingRed, Montbeliarde and Holstein had proved to be a profitable cross and the University of Minnesota studied the concept. Short after this, the system ProCROSS came to life and the circle Holstein-VikingRed-Montbeliarde is powering stable, productive and healthy herds.

The first conclusive results from the university state that the three breeds combine and compensate very well their strong and weak points making the perfect balance. "The ProCROSS three-breed rotational crossbreeding program will create a very stable herd because, over generations, cows will have the blended characteristics of the Holstein, Montbeliarde, and VikingRed breeds," the University of Minnesota affirms as a part of its recent conclusions in the beginning of 2016.

"The reason why it works is that you include Holstein that has high-level production and good udders with VikingRed, bringing health traits, fertility, easy-calving and longevity. Then you have Montbeliarde which gives high protein production. They are three very different breeds that fit very well together", Hielke Wiersma, Export manager for ProCROSS, states.

Always use the best bulls

The scientific report by the University of Minnesota states that crossbreeding gives heterosis and solves inbreeding problems, they recommend to always use the right breeds, follow the plan and use the best bulls within these breeds. ●

Results:

The University of Minnesota published scientific conclusions in January 2016 about the success of crossbreeding on eight high-performing dairy herds, where 2,265 cows (Montbeliarde x Holstein, VikingRed x Holstein and pure Holstein cows), finished their first lactation. Results show that crossbred groups are superior in cow fertility, less stillbirth rates and healthier calves, better survival to second lactation and smaller sized cows.

Heterosis: Is the opposite of inbreeding. When genes are mixed with different breeds, the offspring gets a bonus on top of the parental average. For fertility and health traits, it is approx. 8-10% bonus and for production, the effect of heterosis is approx. 4-5%.

Table 1: Technical scores.

	Holstein	Montbeliarde x Holstein	VikingRed x Holstein
Number of cows	1134	548	583
Age at calving (months)	23.9	23.8	23.7
Milk (kg) Milk (lb)	10,790 23,787	10,954 24,150	10,537 23,230
Fat and protein (kg) Fat and protein (lb)	741 1,633	760 1,675	749 1,651
Stillbirth (%)	9	4	5
First service conception rate (%)	38	43	47
Survival to 2nd calving (%)	80	84	83

Source: University of Minnesota and ProCross official web page.

Rex A. Clausager, CEO of VikingGenetics:

"The bulls we have in the barns are the **best choice** for a farmer **to optimize his profit**"

By Veronica Löfgren, Communicator, VikingGenetics

Rex A. Clausager has been the Chief Executive Officer (CEO) of VikingGenetics for one and a half year. He recognizes many advantages in leading a breeding company owned by farmers, that is a pioneer in genetic solutions, and wants to take the business to the next natural level: to increase sales outside the home markets.

Where is the company at this moment?
When I joined, it had been quite an impressive record of accomplishment of bringing three countries and companies together. Many things have really been put into place and it was an optimal platform to start looking more dedicated to the global expansion, and I believe that is where we are now. Our vision goes outside, and it is just the next natural step in the development of the company.

VikingGenetics's CEO Rex A. Clausager giving a look to the straws with bull semen ready to meet the global market.

Which department do you think is going to be the engine of the company now?
The motor is a combination of everything. You cannot pick one thing, and say; Okay, now the laboratory is not that important. Because if the laboratory is not doing the best to ensure quality and efficiency then that piece of the puzzle is missing and the engine will not work.

What are the specific goals?
The main specific goal is to support the home countries and maintain the strong market share that they have. The next step is to increase on export and have an export market at the same size as the home markets in terms of volume. The composition today is 75% home market and 25% export.

What do you think is your managing style?
I am 100% aware that you will not get one or two people moving a company like this, you need everyone to know what their role is, where do we go, and how can we support the goals of VikingGenetics. We have a culture where people both feel responsible and take responsibility. I have a lot of respect for people in different parts of the company that know much better what is going on than I do.

Why do you think VikingGenetics is the best choice for a farmer in the current situation with low milk prices?
The dairy production, in general, is under an enormous pressure right now and we want to underline what we at VikingGenetics have done right, and that is to have focused on the economically important traits such as milk production and healthy cows. This is for sure the strongest point for us.

» At VikingGenetics, we have a passion for what we do; everyone knows that what they do is important.

Rex A. Clausager with VR Flame during one of his visits to VikingGenetics' office in Skara, Sweden. When times allow, he likes to see the bulls in the barn.

Other companies also claim to have the best health traits. How does VikingGenetics handle this?
I actually believe that we are too modest compared to other companies that say that they have breakthroughs, and have new technology. These are things that we have done for 30 years; we have all data to support the health traits.

Can you describe VG's style of approaching their clients?
Our strength is that we are a cooperative, so our members are our customers and our owners. Moreover, that means that they have a long-term interest in making sure everything is on the right track. I think that is healthy, compared to private companies that are looking at short-term profits and just making sure that you have the results ready for next year, and not being 100% concerned about the farmer by the end of the day.

How is VG approaching new markets?
We always show a lot of respect for the local market, and try to understand what the traditions, the values and the conditions are on the local basis. Moreover, one of our strengths is that we are not only offering just one breed; we have an extremely strong combination of three strong breeds.

What other competitive strengths does VG have?
It is all about making life easier. If you have the best genetics in your herd, you will also have less problems. I believe that this is the most important factor when you manage a farm, that you should not have extremely sensitive cows that you need to handle extra carefully. Instead, you can use your management time to make sure things work. If you have sustainable, healthy, long-lasting cows, you can use time in planning next steps instead of trying to repair troubles all the time.

How committed is VG in Research and Development?
We are very dedicated to that. VikingGenetics is probably the first global company to take in genomic selection 100% in the breeding program.

How does VG listen to, and get feedback from customers?
We have a close cooperation with the owner companies who meet the customers every day, and we get feedback from them. To make sure that the breeding objectives of the three dairy breeds - and the beef breeds - are accomplished, we have breeding committees consisting of farmers from each country. When we work abroad, we work closely together with the distributors and put a lot of effort in understanding them and their situation.

Which markets does VikingGenetics proritize right now?
We continue to serve customers in more than 50 countries around the globe. Having said that, we want to have a relevant market share in Australia, where we already have a VikingGenetics office. Then the United States (US) and Britain (UK) are our main focus markets at the moment.

Do you have a special message to employees and stakeholders?
I came into a company that already had an excellent record of accomplishment, and I am very happy that we can have this strong foundation with skilled colleagues in home market and export markets, especially right now in Australia where we have most people abroad. At VikingGenetics, we have a passion for what we do; everyone knows that what they do is important. ●

The success of the Botans farm **inspires the next generation**

By Veronica Löfgren, Communicator VikingGenetics

The bulls Botans and B. Jurist are two of the world's most famous bulls in VikingGenetics' history. Both were born at the Samuelsson's farm Botans, in Rättvik in the middle part of Sweden. These bulls have given so much inspiration to this family and are known around the world because of their healthy, long-living and profitability daughters. Having achieved such a success became the engine that drives the Samuelsson's family.

Everyone in this family talks the same "cow-language". From the father Bengt, who spends most of time in the barn to his 18-year old daughter Mikaela, who likes the cows and recently attended the calving after the first insemination made by herself. The youngest one of the three children of Bengt and Kristina Samuelsson is 16-year old Fredrik, who most of the time also willingly assists with the cows.

However, it is the oldest daughter, 20-year old, Josefine, together with her mother, Kristina, who leads the strategy of the breeding plan. "It is so interesting to look at all new bulls on the computer being published on VikingGenetics' web page", Josefine says.

The bulls Botans and B. Jurist have a special connection to Kristina; "Josefine and the bulls were born the same year," Kristina laughs. And the daughter feels very proud of the bulls. "When I was in Finland attending a young red breeding conference, and I said that B. Jurist is from my farm - I knew he is the most famous of them - and there was a person from New Zealand saying: then, Botans must come from your farm too!", Josefine says and smiles.

The genomic era is changing the way dairy farmers, like the Samuelsson's, do management, selection and breeding decisions. This family has understood the importance of genomic test on all their females, and they put in a lot of effort picking the right bulls. "I go through the lists myself and decide which bulls we think are the best, and go for them," Kristina states, although they are aware that the doses they choose could be the most expensive.

Kristina and Bengt Samuelsson with their children; Fredrik, Mikaela and Josefine. Everyone in this family talks the same "cow language".

Right now, they are preparing three heifers for embryo flushing, on contract from VikingGenetics.

They go for high NTM bulls, and important traits that they look at is production and longevity. "With selection based on these traits, we get high production and healthy cows, and that is exactly what we are aiming for", Kristina says.

They use between 15 and 20 different bulls per year. "There are so many bulls today, and we select the ones we think suits our breeding goal," Kristina adds. With so many different bulls to choose from, it is easy for each farmer to find bulls that suit his/her breeding goal on the farm. ●

Facts:

- Botans farm has 320 cows in two properties
- 50% VikingRed, 50% VikingHolstein
- 420 ha
- Production average 12,600 kg ECM
- Age at first calving: 26 months
- Calving interval: 12.5 months

Burns farm, one of the farms that **produce bulls to VikingGenetics**

By Camilla Rosman, Marketing manager VikingGenetics

The bull VR Viro is born on this farm that has 380 dairy cows altogether, 100 Holstein, 230 VikingRed and 50 crossbred cows, and average production 11,700 kg ECM (Energy Corrected Milk). The farm is owned and run by Kjell Arvidsson and Ann-Sofie Lind and Kjell's son Gustav Arvidsson.

VR Viro will have a full proof in half a year and today his gNTM is +21. He has two sons that have been used as sires of sons, VR Vendi gNTM +29 and VR Vind gNTM +28.

The dam to VR Viro, Krusa (Gunnarstorp x O Brolin), is still alive and just got her sixth calf. She is 138 cm, had her first calf at 23.5 months, calving interval 11.9 months, and has milked for 5.2 lactations in average 10,617 kg milk with 4.6% fat and 3.6% protein. Lifetime production is 55 tons. A perfect dairy cow.

They milk three times per day, and they do the insemination services themselves. The farm is testing all females genomically to be able to make the correct decisions when it comes to replacement. They use beef on females with the lowest Nordic Total Merit (NTM) or they sell them.

Breeding goal is high NTM meaning healthy cows. Other important traits are udder, feet and legs and milkability. All the time, they focus on udder health. They use the mating program "Genvägen" and a breeding advisor from Växa Sverige makes the breeding plan. They have made flushes on contracts from VikingGenetics on the farm, and one heifer is now at VikingGenetics' embryo flushing station in Skara.

Focus in the herd is high NTM, and average NTM on expected calvings is NTM +22.2, which is very high and promising for the future. ●

Facts of the farm:

- Average production: 11,700 kg ECM
- Age at fist calving: 26 months
- Calving Interval: 12.5 months

Gustav Arvidsson checking the heifers on the pature near the river.

Different Viking Genetics' solutions demanded in Zimbabwe

By Seppo Niskanen, Export manager VikingGenetics

The progressive style of management on the farm "Red Dane Farming" is leading changes in the dairy industry. Among all the services they provide from VikingGenetics, crossbreeding and sexed semen are two of them.

Heat stress is tough for dairy cows, but with good management, cows can be very productive even in extremely hot weather like in Zimbabwe. The owner and manager of Red Dane Farming, Ajs Kirk, VikingGenetics distributor in Zimbabwe, explains that the country has potential to produce more milk.

"The milk production is too low compared to the consumption. Milk can be produced in an intensive system like we do with the 600 crossbred cows in this main herd", Kirk says. He has been using only VikingGenetics sires in his crossbred herd for a long time. The milk production is 27 kg milk per cow a day, which is the highest in Zimbabwe.

The crossbreeding is gaining more and more followers in this country. "I have read a lot about the good results with crossbreeding and I want to test that in my herd, too," Mark Salle states. He milks 38 cows in the Ivordale farm in Zimbabwe, most of them Holstein and the plan is to increase the number of cows to 120.

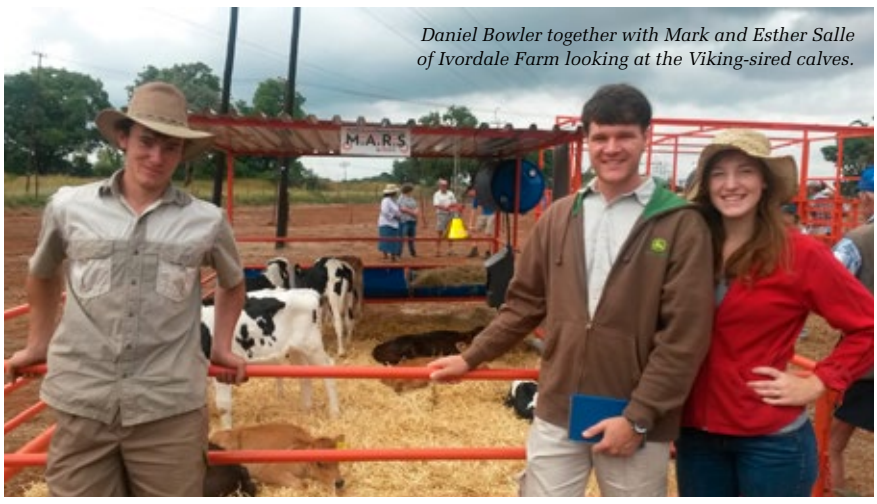
He has also used sexed semen from VikingGenetics which works really well.

Good results with sexed semen

Stoff Hawgood is a dairy producer who owns Tavistock farm in Beatrice, 60 kilometers from the capital of Zimbabwe, Harare. He milks more than 500 cows, half of the herd is purebred Holsteins, and half is purebred Jerseys. Both breeds are doing very well within the herd, he states.

If a cow does not get pregnant, Hawgood has the perfect solution for this by using VikingRed semen. "Cows that are bred by VikingRed bull semen usually get pregnant". Hawgood wants to take his herd to a higher level, and to reach his goals he uses VikingGenetics' solutions. "We use a lot of sexed semen, both VikingJersey, and VikingHolsteins. All the heifers are bred to sexed semen, and we have got excellent results with that, even better than with conventional semen," he states.

According to him, the key to success is the right time for insemination. "We don't inseminate the animals too early; it is better to wait. When the heat control works well, we have higher than 70% of pregnancy rate, and we are very happy for that!", Hawgood laughs.



Daniel Bowler together with Mark and Esther Salle of Ivordale Farm looking at the Viking-sired calves.

Healthy VR Vimpula calves from X-Vik semen at Red Dane Farming.

Stoff Hawgood and part of his staff with Viking Genetics calves on Tavistock Farm.

Argentina interested in Nordic genetics

Suvi Johansson, the Export Manager of VikingGenetics in Latin America, was interviewed in early May, by the prestigious magazine in Argentina, Nuestro Holando. Johansson talked about the advantages of VG's products and services and explained more about the genomic experience and knowledge VikingGenetics has to help farmer's success in their breeding's goals. Here is a selection of questions from this interview.

What are the main advantages with Scandinavian genetics?
For more than 30 years, we have been breeding very focused on health traits. We work with mastitis resistance, hoof health, other diseases, easy calvings, female fertility and longevity, as well as all traits related to milk production such as solids of fat and protein. 90% of all cows, app. 1 mill cows, are in milk recording and all veterinary treatments on a cow are by law registered in the milk recording database. We want invisible cows, cows that are high-producing, healthy, strong in conformation with good feet and legs, good udders, and have an average size. We avoid working with big cows because, according to studies, big cows will not last long in the herd.

What is the average herd size in the Nordic countries?
In Denmark, the average herd size of a dairy farm is about 175 cows. In Finland there are many small herds, and average herd size is about 35, and in Sweden about 80 cows in average.

What are the main dairy breeds in VikingGenetics?
In general, we have the same breeding goal for all our three dairy breeds; high production and good health. We have about 584,000 Holstein cows in milk recording and our Holstein cow is characterized by being a very productive cow with easy calving, a general, good health, and average size.

VikingRed cows are healthy and fertile cows with easy calvings and high production. The population of the red breed is about 273,000 cows. Meanwhile, Jersey is characterized by its production and extremely high percentages of fat and protein. The population is 71,000 cows and they are internationally famous for high solids, good health traits and different bloodlines.

How influenced was VikingGenetics by the use of genomic proofs?
VikingGenetics took an active role in this new technique from the very beginning, and soon the farmers in the Nordic countries began to use it. Today, almost 100% of the services within the Holstein and VikingRed breed is made by genomic sires.

What are your main markets?
Our top five markets worldwide are Australia, USA, and the European countries; Norway, England, and Holland.

What does VikingGenetics expect from the Argentine market?
We have a product that is suitable for the Argentine market; we do not doubt that producers will have excellent results with our genetics. Our Holstein bloodlines complement the breeds that Argentina's farms use, mainly because we provide all we can offer on health traits without losing production. ●


ENTREVISTA

Nuevo desembarco de la genética nórdica

Levantando los estandartes de salud y rasgos económicos

Trusting Embryos from the very beginning

By Ritva Hilpelä-Lallukka, Sire analyst, VikingRed

The farmer couple Taisto and Kirsti Hurvi, in Finland, have never fought against development. On the contrary, they have always used all possibilities to improve their herd. What else can you think when you know that they already 20 years ago started to buy fresh embryos from Asmo nucleus herd.

Along the years, they have purchased a high number of frozen embryos and many heifers have been sold to the nucleus herd for flushing. Now they take part in the LD project, where they take out genomic test of all heifers in their herd, and they take part in the new fresh embryo network.

"We were among the first to join the fresh embryo network. Our pregnancy rates were good, and we got 12 heifer calves in to start with, which of course inspired us to continue with embryos", Taisto says. Agreeing with that argument is easy. The 60-head herd is excellent, and includes twelve high-index females. The daily plan bull and sire of sons a while ago, VR Vauhti, is a product from this herd, with embryos bought and heifers sold during the process. The other bull sold from this herd is VR Valu.

Genomic testing started with VG offering to test some promising animals. The VR Valu's dam, Etti born in 2009, is now the oldest genomically tested female. The herd joined the LD-project when it was first launched. "We started trusting the test results at once because we saw that the reality was what the test showed", Kirsti states.

There are long, interesting embryo stories to be told about the herd, but by now, two other heifers have been sold to VikingGenetics nucleus herd, sired by VR Enox and VR Visio. "We are taking the two heifers back home after the flushings; they are so interesting by pedigree, "Kirsti comments. "But, why not let more farmers profit from them by buying embryos first!?", Taisto concludes. ●

Taisto and Kirsti Hurvi together with Jänönsara, one of the VG FlushFee contract females waiting for her calving in the dry cow barn.

VikingRed far ahead in economically important traits

By Camilla Rosman, Marketing manager, VikingGenetics

Interbull is the perfect choice when you want to compare bulls across countries. Nine persons from different countries in a steering committee manage Interbull, and they make breed evaluation three times per year for 35 countries from around the world.

Breeding organizations around the world are calculating breeding values in different ways, with different genetic statistic models, and different parameters. In addition, the definition of what the trait is can differ between countries and there might be genotype and environmental cooperation that make bulls perform differently in two countries. The Interbull Center is calculating international breeding values to create a fair comparison of bulls from different countries. Each participating nation gets a list of every bull on their scale.

In the table below, we have put some of the main countries for the red breeds (RDC) and we have compared breeding values in some traits. As is shown, Red Dairy Cattle (RDC) from Denmark, Sweden and Finland are far ahead when it comes to traits that are economically important, such as milk production and health traits.

It is also important when you compare bulls to include the number of bulls a country is testing. For a small population, it is harder to find the best bulls than it is in a bigger population. Bulls in the investigation are only proven bulls with milking daughters. ●

Table 1. Comparison of Interbull figures from April 2016. RDC, proven bulls on Nordic scale

Country	No of bulls	Production index	No of bulls	Udder health	No of bulls	Calving ease sire	No of bulls	NTM
Denmark	**36**	**107.6**	**63**	**100.3**	**62**	**98.1**	**36**	**+10.8**
Sweden	**137**	**103.5**	**131**	**101**	**138**	**101.8**	**137**	**+5.7**
Finland	**172**	**103.2**	**198**	**100**	**176**	**101.8**	**172**	**+3.4**
Norway	176	95.3	176	96.0	176	101.0	176	-8.2
Estonia	19	93.8	17	91.7				
Germany	10	91.9	12	91.9			10	-11.5
Australia	12	90.8	6	95.8				
New Zealand	26	89.9	31	90.0				
Canada	24	82.3			48	96.1	7	-18.7
USA	5	69.0	6	86.6	7	95.0		

Kuusinen farm in Finland on its way to success

By Auli Himmanen, VikingRed breed coordinator VikingGenetics

Kuusinen farm in Kuhmalahti Finland has not been the successful farm it is now all the time. The beginning was tough with an infection on the farm, but its owners never gave up. Now they own one of the most successful farms in Finland.

Jarkko and Marketta Heikkilä, at Kuusinen farm in Kuhmalahti Finland.They fought the disease for four years. After a lot of losses, the herd was started again by buying heifers.

Now the situation is different. Antti-Jussi Heikkilä, the son, is in charge of the farm. The family has a mixed herd and average yield of 10,000 kg and two new robot cow houses are on the drawing table. The herd is in the LD-project, genomic testing of all females, and is also in the current embryo network.

The Kuusinen herd has already produced three 100-ton cows, one Holstein and two Ayrshires, the latest being Saaga (s. Aika). Today eight red high index females make sure the herd develops in the right direction. Three bulls have been sold to the bull station in VikingGenetics and a fourth bull from another farm, an embryo calf originating from this herd. ●

VIKINGHOLSTEIN

100 new Holstein bulls – every year

By Claus Langdahl, Sire analyst, VikingGenetics

100 new Holstein bulls are bought to the breeding program each year. To find those 100 bulls, there are 3000 bull calves tested genomically, selected by pedigree index. The genetic progress each year is 4-5 NTM units, which means 40-50 Euro more per cow each year in profit.

High average index in all traits

In table 1, you can see the lowest and highest index on the bought bulls on average. gNTM of the bulls range from +27 to +45, and that has to do with different levels on different pedigrees. The red Holstein bulls are included in this table, and they are usually lower than the ordinary Holstein.

Table 1.
Average and highest and lowest index for the last 100 bought Holstein bulls.

	Average	Highest	Lowest
gNTM	+37	+45	+25
Protein	118	135	102
Production index	120	135	105
Female fertility	112	128	92
Udder health	113	128	96
Hoof health	108	123	95
Body	106	125	87
Feet & legs	111	135	94
Udder	120	143	102
Milkability	107	148	88
Temperament	106	120	91

Polled bulls

Eight of the 100 bulls are polled, and nowadays the polled bulls are almost at the same level as the other bulls. There is a little bit less variation in the pedigrees among the polled bulls than in normal Holstein bulls though. Seven of the eight polled bulls have official indexes which you can see in table 2. One of the seven bulls, VH ZikPPRC, is homozygote polled, PP, and at the same time he is a red carrier, RC.

Table 2. Polled bulls with published evaluation. Not all have semen available yet.

Name	Sire	MGS	gNTM
VH Snooz P	Style P	Saleen	+37
VH Pogba P	Powerball	Massey	+36
VH Never P	Nilson	Magna P RF	+36
VH Comxa P	Commander	Xacobeo	+34
VH ZikPPRC	Zumba P	Ladd P Red	+28
VH Otago	VH Oneal P	VH Bostrup	+26
VH PetrusP	Powerball	Uno	+25

Country of birth

The 100 bulls are born in seven different countries. Most of them are born in Denmark and almost same number of bulls are born in Sweden and Finland. Our project with exchanging genotypes with NOG (Germany) has resulted in bulls that are born in Germany, USA and Canada.

VH bulls or imported bulls?

VikingGenetics has always had an open breeding schedule, meaning that we have always used the best bulls around the world as sire of sons based on NTM. 59 of the bought bulls have a sire that is not from Viking and 48 of the maternal grandsires of the bought bulls are not from VG. Bulls that have most sons are Reflector (5) and Rodgers (4). All other sires have less than four sons. As MGS, VH Miracle is in the top with 11, and then VH Grafit (6) and VH Bostrup (5).

ET

52 of the 100 last bought bulls are out of ET and we expect an increase in that number due to bigger activities today with ET among the top heifers.

VH Comxa P (Commander x Xacobeo)

VH Miracle on the Danish National Show; Landsskuet

This year's show in Herning, Denmark, 30 June -2 July, was again a great success with many visitors and lots of animals. We are happy to present that VikingGenetics is also in the top position when it comes to shows, where two daughters by VH Miracle were the class winners. VH Miracle is really a top bull and has today NTM +21.

Daughters by VH Miracle – Class Winners at the Danish National Show 2016.

Proof August 2016

VH Highway is still in top with impressive gNTM +45, closely followed by bulls like the new son of Balisto, VH Brixton gNTM +44, VH Skipper (+42), VH Broback (+41), VH Gofeet (+40), and VH Sweet (+37).

Proven bulls

There are many new proven bulls in top this time. No 1 is still **VH Cost** with +26. **VH Ronaldo** is a new bull and is together with **VH Peder** and **VH Clark** on NTM +25. Other new bulls in top is **VH Goblin** (+24), **VH Redwood** (+23) and **VH Oneal P** (+22). Also the highly used **VH Miracle** continues to improve his index and now has NTM +21.

Use of different bull categories in the home market

Farmers in the Nordic countries are pioneers when it comes to the trust in genomic selection and we have the highest usage of young genomic bulls of all countries. Farmers and breeding advisors understand the speed of genetic progress of today and understand that younger bulls are the best choice. Just have a look in table 1!

Table 1.
Usage of different categories in the home market in 2016

Category	
Genomic bulls	95.8%
Proven bulls	0.5%
Import semen	3.7%
X-Vik (included in genomic sires)	8.8%

VH Brixton – a story of a top son by Balisto

VH Brixton comes from an embryo flush on a VH Mandel cow, no. 2560, from Flemming Petersen, Ribe, Denmark. He was a late Balisto son, and there had already been bought enough from him, but his genomic test was the highest test ever from a Balisto-son so there was an exception taken to buy him. Now **VH Brixton** is ready for use and has gNTM +45.

Flemming Petersen is a very well-known and engaged Holstein breeder in Denmark. The last years, he has produced many bulls to VikingGenetics like VH Sparky and VH Reggae, which both have been used a lot on home market, and he is also the breeder to the less well-known bull VH Oshea (VH Osmus), who is the half brother to the dam of VH Brixton.

2560 has now calved for the second time and got a heifer by Reflector. She produces high components and she is scored VG88. As a heifer, she was flushed twice, and today she has offspring by six different sires. Her dam is a daughter to S Ross, scored 83, and further back in pedigree is a well-known cow, a full sister to the dam of VH Miracle.

VIKINGJERSEY

News from VikingJersey

By Peter Larsson, Breed coordinator VikingJersey

DJ Zuma "Gaia" has won it all

The fabulous Overall Grand Champion at Danish National Show 2015, "Havdal Zuma Gaia", won new titles at the National Show this year. "Havdal Zuma Gaia", bred by Jorn Mikkelsen, Havdal Jerseys, Denmark, started her career as Jersey Champion heifer 2013, followed by winning Jersey Junior Champion and Jersey Jug in 2014. In 2015, she became Intermediate Jersey Champion, Jersey Super cow and Overall Grand Champion ("Miss Denmark") at National Show. This year she was Jersey Senior Champion and won the super cow class once again at Landsskuet in July 2016. Certainly a very special cow. Not just good-looking (EX94), but also high production: 2.8 years with a yearly average of 8,540 kg milk with 6.3% fat and 4.5% protein!

Havdal Zuma Gaia. The first cow to win all different titles at Danish National Show

High demand of sexed semen

The use of Jersey sexed semen in VikingGenetics countries has kept increasing over the last years. Now more than 21% of all services are with X-Vik, and the good news is that the difference in pregnancy rates between conventional and sexed semen is now only 7%.

VikingJersey Reference Population increase

After the introduction of cow data to our genomic reference population, reliabilities on genomic breeding values have increased. The VikingJersey reference population today consists of 3,000 daughter proven bulls (Danish and North American) and 10,000 genomically tested females.

Jersey crosses are the most efficient in Ireland

Research in Ireland shows that although the purebred Jersey and Jersey crossbred cows produced less milk than the pure Holsteins, the production of milk solids was similar. Jersey crossbred cows had higher intake per unit live weight and produced more milk solids per unit intake than pure Holstein cows. This greater feed efficiency makes these animals well suited to a pasture-based production system.

Udders are improved in VikingJersey

Udders in the Jersey breed have been improved during the last years. The weight on udder index was increase a few years ago, and it is important that udder conformation is following the increased level of production, and this is exactly the case in VikingJersey.

16 Jersey heifers in VikingGenetics' nucleus herd

Over the last six months, VikingGenetics has established a Jersey nucleus herd in Skara, Sweden. The aim is to buy and flush the very best heifers in VikingGenetics countries. So far, fifteen flushes have been done, with an average of 7.1 transferable embryos per flush. The aim is to use the first doses of semen from the very top 8-10 months old bulls for flushings on the very best heifers.

The first Swedish Jersey heifer for flushing by VJ Lyrik with gNTM +28.

VJ Hiwe

VJ Hihl x DJ Hulk x Q Hirse

High production combine with health, longevity and super conformation

VJ Hiwe

VJ Hiwe is out of the DJ Hulk daughter, "Adelgaard Hulk Jewel", bred in the Adelgaard herd, owned by Vagn Lindy Petersen, Denmark. VJ Hiwe is out of a very high-producing cow family, known for high solids.

The dam, Adelgaard Hulk Jewel, has produced 7400 kg milk with 7.2% fat and 4.6% protein per year, in 4.9 years. Same cow is also the dam of the Topeka son VJ Tupolev.

GGD is "Bjerregaard Lemvig Bolette", bred by Niels Erik Nilsson, Tanderupkær. This cow bred the Q Hirse son VJ Hickey, making him a full brother to the GD of VJ Hiwe.

VJ Hiwe is our highest ranking sire currently. He breeds high production of milk solids, as well as tall daughters with good F&L and very shallow udders. Teats are of excellent size and other trademarks are udder health, longevity and milking speed.

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

VJ Horst

DJ Hulk x DJ Lirsk x Q Impuls

New daughter proven bull with production and excellent F&L

Dam of VJ Horst

VJ Horst is of an extremely high-producing DJ Lirsk daughter from the Haugstedgaard herd, owned by Peter Hoj, Denmark. VJ Horst has an exceptional sire line up in his pedigree: DJ Hulk x DJ Lirsk x Q Impuls x JAS Hot.

The dam, scored VG86, has been milking 4.7 years with a yearly average of 8840 kg milk, with 6.48% fat and 4.38% protein – nearly 1000 kg F+P! Next dams have been milking 7.1 years and 9.7 years, both averaging more than 8500 kg milk and 925 kg F+P yearly.

VJ Horst is our highest-ranking daughter proven sire currently. He breeds high production of milk solids, high percentages (especially protein %), average size daughters with excellent F&L, along with good udders with ideal teat size. VJ Horst breeds very good health, young stock survival, longevity and fertility.

VJ Hitman

VJ Hian x DJ Jason x DJ Idorn

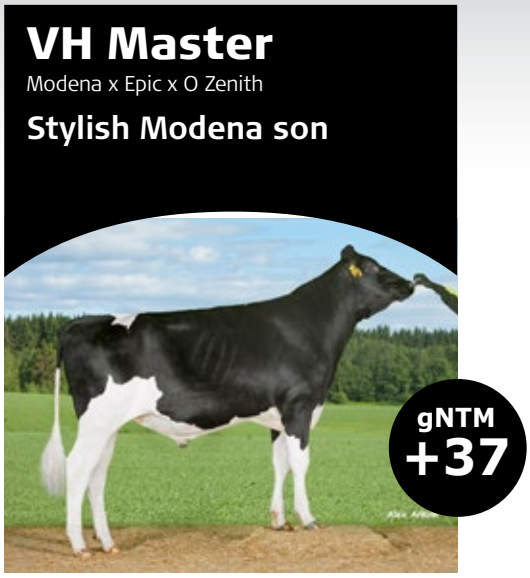
Outcross and breed leader for mammary and fertility

VJ Hian is the sire of VJ Hitman

VJ Hitman is owned by Anders Levring, Fjellerup in Denmark. The dam of VJ Hitman is a good example of how it pays out to do genomic test of females.

The dam of VJ Hitman increased her Nordic Total Merit by 25 NTM units after genomic test, resulting in a top ranking in the Danish Jersey population. "Ranch Jason Sivring", VG88, was flushed to VJ Hian, and the result was VJ Hitman and three full sisters. The dam has ended her first 305-day lactation with 6400 kg milk, 6.5% fat and 4.6% protein! Next dams are at 7500 and 7700 kg milk yearly.

VJ Hitman breeds high protein components and exceptionally high breeding value for udder traits. Breed leader for udder depth and ligament. Furthermore, he breeds very good F&L, and in the lead for fertility and udder health.



VH Master

VH Master is a Finnish born Modena (Mogul) son. He is breed at the herd of Mauno Heiskanen in Finland. The Epic dam is classified 82.

The dam of VH Master has now produced first lactation and did amazing 5.2% fat and 3.8% protein and 9500 kg milk. The same strength is found in her dam as well.

VH Master breeds very nice animals that are tall, dairy and wide rumps. The legs are fine with a super hoof angle at 116, and udders are nicely attached in the fore udder and good udder depth. He breeds good production and not surprisingly good components. Udder health is perfect at 120 and also calving trait, both direct and maternal are very good. All in all, a very stylish bull.

aAa: Cappa Casein: Beta Casein:

VH Reggae

VH Reggae is born in the herd of Flemming Petersen, Denmark, where also the bulls VH Sparky (VH Suarez) and the new top bull VH Brixton (Balisto) were born.

The sire of VH Reggae, VH Ronaldo is among the highest daughter proven bulls with +25 in NTM. He has been used a lot in the Viking area. The VH Reggae dam has an average production in 1.7 year of 12,000 kg milk and is classified VG84. She will have her third calf in September – by VH Skipper. In the pedigree, we also find Shottle and RGK Bob CV.

VH Reggae has a very appealing profile. Production is good with 121 based on good components. Conformation is super and very functional. Fertility is above average and health very strong especially udder health index 115. And then some super management traits – milking speed 120 and temperament 108.

There are X-Vik doses available for VH Reggae as well.

aAa: 324 Cappa Casein: BB Beta Casein: A2/A2

VH Merica

VH Merica is bred in the herd of Allan Kjær Simonsen in Denmark. VH Montee, sire of VH Merica, is still a genomic bull and behind him are some of the well-known daughter proven bulls.

VH Merica is the only VH Montee son in VikingGenetics. The dam, the VH Pop daughter, was an embryo made at the nucleus herd Viken in Sweden and that was where the Roseo Joc daughter lived and in average produced more than 13,000 kg per year. Her VH Pop daughter is also high-producing and in 1.2 year has an average of 12,500 kg milk with 950 kg fat and protein.

VH Merica breeds good production at 118 and protein at 118. Health traits are very positive with udder health at 120 and hoof health at 109, calving traits are also well above average. He gives animals with a good body capacity, average feet and legs and super udders at 120.

aAa: 243 Cappa Casein: Beta Casein:

VH Comxa P

VH Comxa P

Polled genetics is in some regions of the world becoming a more and more important alternative. VikingGenetics can also offer good genetics that give excellent polled animals.

VH Comxa P is a heterozygotic polled bull (used on not polled animal, 50% of his offspring will be polled). He is bred by Kresten Dahlgaard in Denmark, for several years he has been working intensively with creating good, polled animals and has now built the polled gene into his animals via the maternal side and thereby offers alternative polled sire lines.

VH Comxa P breeds very high production, super mammary, good maternal calving ease and fast milking speed. The dam has in 2.8 years an average yearly production of 13,400 kg with more than 1050 kg fat and protein and is a VG86. Her dam – the O-Man is VG85.

aAa: 234 Cappa Casein: Beta Casein:

VH Vesuv

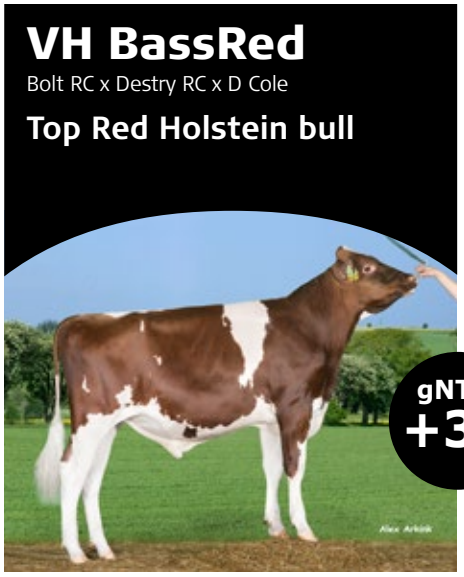
VH Vesuv

With his +30 in gNTM, VH Vesuv is a really valuable bull for the breed. The sire VH Vaski was at his time used as sire of son because he is a true outcross to the Holstein population.

His pedigree is S Viikinki x Turbo. Really nice to be able to present his son now and then even at a competitive NTM level. He is bred by Jens Lykou Petersen, Denmark. His dam has produced 12,000 kg in average of 1.4 year with 900 kg fat and protein and is classified VG87. The D Banker dam is likewise a super producer and classified VG85.

VH Vesuv will give you smaller cows with good strength, very nicely attached udders. The production is 113 coming from high components especially fat. Female fertility is in the top (123), and all other health and calving traits are above average.

aAa: 432 Cappa Casein: Beta Casein:



VH BassRed

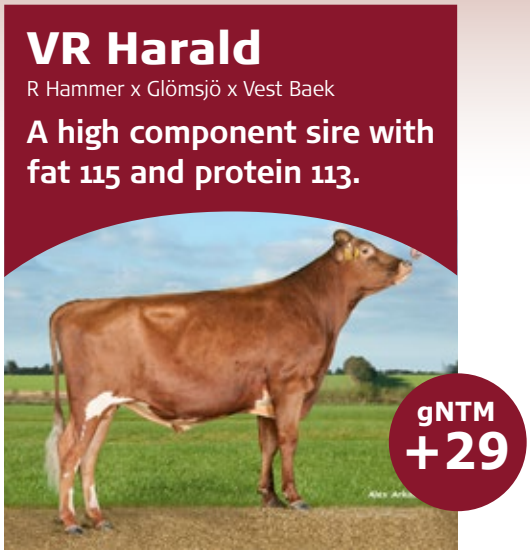
VH BassRed

VH BassRed is a Red Holstein bull with +36 in gNTM on the Red and White Holstein index scale. He is bred at Solbakken Agro in Denmark.

VH BassRed is from a black Holstein family but with use of RC (Red Carrier) bulls. The Destry RC cow has an average production of impressive 15,800 kg and 1,100 kg fat and protein. Her dam, the D Cole cow, is also a good producer.

VH BassRed is a trustworthy production bull with index at 131 in production and 135 in protein. Health and fertility is around average. He breeds calm and very stylish cows – tall, dairy with good feet and legs. Mammary is impressively 127 with super attachment both in fore and rear udder, good ligament and udder depth. A very appealing Red Holstein bull that really deserves his top ranking!

aAa: 432 Cappa Casein: Beta Casein:



VR Harald

VR Harald is an exception among the VR bulls because his dam is an old cow with seven lactations today. The breeder is I/S Sindbjerggaard by Soren and Claus Vilsgaard, Denmark.

The dam has high components and she has inherited that to her son: fat 5.1% and protein 3.9%. The average production is 9413 kg milk, 476 kg fat and 367 kg protein.

VR Harald has very good calving performance both as sire and MGS. He has excellent figures in all heath traits and is average in size with top feet and legs and udder

aAa: Cappa Casein: Beta Casein:

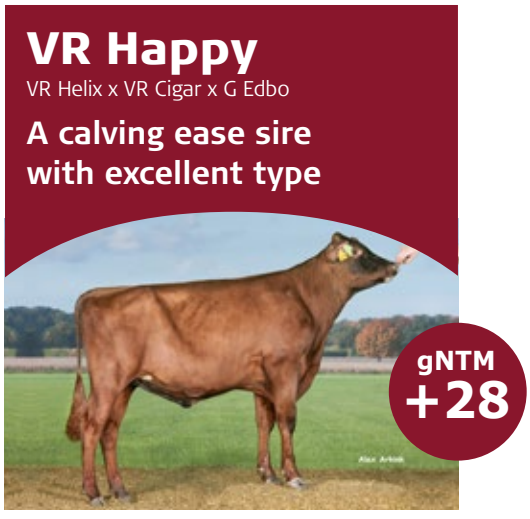
VR Hielke

VR Hielke comes from Morten Hansen, Denmark, as many of the VikingRed sires at the moment do. He breeds good production with high components and average size with top Feet & Legs as well as udder conformation.

VR Hielke has also positive calving and health traits. The dam is on her fourth lactation with latest production 12,932 kg milk with components 4.4% fat and 3.7% protein.

The Grand dam was a great O Brolin cow that was flushed. She gave an average of 12,931 kg milk, 559 kg fat 4.3% and 484 kg protein 3.7%, and was classified 85-86-86-87.

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



VR Happy

VR Happy is a Helix son out of VR Cigar dam from Soren Rondbjerg, Denmark. He is a very high component sire.

The Cigar dam is out of a G Edbo cow that was bought as a heifer on an auction because she had high NTM. The G Edbo was flushed several times and got 32 off-spring. The dam of VR Happy has three half sibs sold to VikingGenetics – VR Halvor, VR Persie and VR Hembo.

VR Happy is a high component sire, fat-% 111, protein-% 117. He has got great calving traits and fast milking speed. Size is average, feet and legs one of the very best with index 126, and udder very good as well.

aAa: Cappa Casein: Beta Casein:

VR Ultra

VR Uudin x VR Truls X Orkko

A VR Uudin son out of a different pedigree

VR Ultra

VR Ultra was born at Nötcenter Viken AB, Sweden. He breeds high production combined with good health.

The dam, 3775 Bina, is an average size cow, calving interval was 11 months and the average production is been 10,008 kg ECM.

She also has a very good udder health with low cell count. The MGD was bought to Viken from Tuvagård. She had three calves and milked in average 9989 kg ECM.

VR Ultra breeds high production, good health and size slightly taller than average with nice udder.

aAa: Cappa Casein: Beta Casein: A1/A2

VR Flame

V Föske x Gunnarstorp x O Brolin

A high-level proven sire who is a former genomic top sire

VR Flame

VR Flame was started as a top genomic sire in May 2013 with gNTM +22. The breeder is Christer Sandberg, Sweden.

The progeny proofs of VR Flame tell us he is a remarkable production sire with good components. He is positive in fertility and in all health traits. Daughters are slightly smaller than average with good legs and bone quality.

The dam of VR Flame, 811 Tekla, is still producing in the herd and pregnant with VR Tokyo. Her average production is 9711 kg milk, 4.3% fat, 3.5% protein, 10,101 kg ECM, lifetime production so far is 56,429 kg milk.

aAa: Cappa Casein: Beta Casein: A2/A2

VR Nail P

VR Nasta P x Buckarby x Andersta

The best polled VR sire at the moment

VR Nail P

VR Nail P breed easy calvings, very good udder health and great longevity. Furthermore, he is positive in all health and fertility traits.

The family of VR Nail originates from Asmo nucleus herd. The maternal grand dam was bought in as a heifer from Mäki herd. She got twins at Luke research herd at her second calving. Both were flushed and the dam of VR Nail was sold to Reisijärven Maitolaituri as a pregnant heifer and got VR Nail as her first calf. Today she is on her third lactation with average production of 9278 kg milk, 378 kg fat and 326 kg protein having very good udder health and total score of VG 86.

aAa: 243 Cappa Casein: AA Beta Casein: A2/A2

Easy living

for you and your cows

VikingGenetics offer you bulls that are reliably evaluated for more health traits than any other company can.

- ✓ Hoof health
- ✓ Resistance to other diseases
- ✓ Mastitis resistance
- ✓ Young stock survival
- = Healthy cows

VIKINGGENETICS®
adding value every day