- THE GENIMEX JOURNAL -

MILK & HONEY

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MATING 101
David Chin, from LIC, shares his findings

NZ SEXED SEMEN TRIAL RESULTS
Joyce Voogt, from LIC, shares her findings

AMADLELO
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HOOF HEALTH
Hoof trimming & hoof care in dairy cattle

BRITT IN WONDERLAND
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NON-CYCLING-COWS
How to identify them and how to reduce their numbers

LIC CONFERENCE 2018
"There is always room for improvement"

The delegates that attended the LIC International conference held in Hamilton New Zealand in December 2018. All those attending are directly involved in the sale of genetics from LIC in their respective countries (Argentina, USA Brazil, Uruguay, Chile, Australia, UK, Ireland and South Africa)

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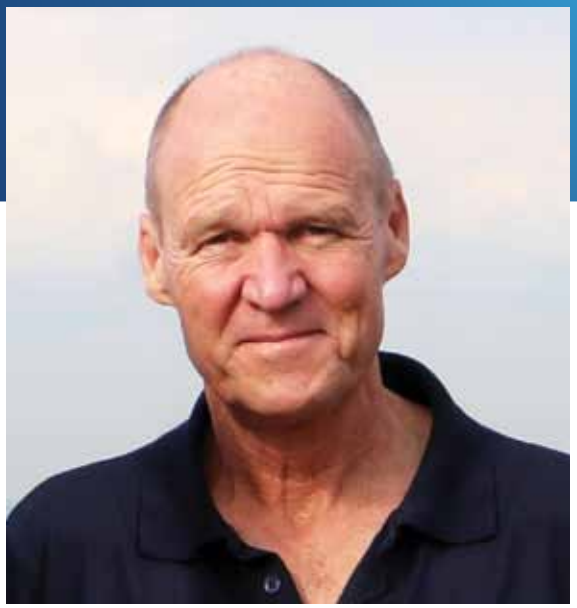
Foreword

By Chris Cloete



While putting together this the 14th edition of the Genimex Journal, Milk and Honey, I have come to realise three things from the content of this and previous publications.

Firstly: As a qualified Animal Scientist who majored in Animal Breeding and one of two people involved in actively selling semen in South Africa that is registered as a Professional Natural Scientist with SACNASP. I focus on Science and breeding dairy cattle that make financial sense. The second person in the AI industry that is registered with SACNASP is Simon Alderson-Smith who by the way is employed by Genimex.

Secondly: For those valued clients that attended the Dairy 2020 workshops in 2017 will recall that Dale Armer presented a paper on personality types and I was confirmed to be an Eagle. Which is to say that I tend to say it as it is and not always how people want to hear it.

Thirdly: I am not and do not profess to be a journalist so I lack the ability to write so the articles and comments I publish will not necessarily make everyone feel all warm, fuzzy and contented.

My friend and business mentor, Ken Bartlett encourages me to allow my feminine side to come to the fore. So here is my feminine side, I apologise to some readers who may see breeding Dairy Cattle differently. This publication is not for the South African breeder that focuses on the traits in cattle breeding that are warm and fuzzy, like rear udders, top line, show type and the such. I question of how much financial value are those traits that are pleasing to the human eye, some may be, some may be perceived to be and most are of zero financial value.

This publication is for serious dairy men and ladies that focus on breeding dairy cattle to make money as well as focusing on the herd concept rather than the individual cow.

As our clients over the years will testify, using genetics from Genimex has bred herds of great cattle where the traits that you cannot see are much more important than the fancy points that occupy so much time in discussion groups of some breeders.

I would like to point out that our two main suppliers have selected for the "Value Traits" for a very long time and are most likely leaders in the field of Value Traits, all pointing to breeding for traits that are of economic value.

In this edition of Milk and Honey we focus on the value of NTM from VikingGenetics and BW from LIC NZ and what is included in the calculation and what they mean to you.

So with 2019 well underway we at Genimex have just completed our sire selections for the year and I, as a scientist, can assure you that these are our best teams ever and that the team of Genimex agents will shortly be visiting you to discuss your breeding goals for this year and into the future.

Maybe, just maybe, the breeders looking for the warm and fuzzy traits take heed and change their philosophy of breeding and focus on economically important traits.

The Genimex agents are, in my opinion the "A" Team of semen agents in South Africa as can be quantified by the numbers of years they have been supplying quality genetics to our valued and loyal clients. Further to that we are in the process of getting all Genimex agents registered with SACNASP, a first in the industry.

When making breeding decisions please take into account that you need to focus on the type of cows you want to milk 10 to 15 years from now and do not take your focus off this goal. Breeding dairy cattle is quite boring, set your breeding goals, select sires from the right population and do it year after year. Do not bow to peer pressure and change what you are doing.

The two teams of bulls (VikingGenetics and LIC NZ) as offered to the SA dairymen and ladies will allow us to supply genetics for all types of production systems. From TMR to extreme production off pastures. We do not have to try and convince clients that sires tested in TMR systems will suit their requirements when milking off pastures. I am sure that you have all heard the quote "Medium stature Holstein sires will breed you pasture cows" those who make statements like that do not take into account Genotype X Environmental interactions. We have many examples of where this kind of breeding policy has not worked. The opposite is also true, we cannot take Sires tested in a pasture based system and expect their progeny to work in very high producing TMR herds.

I would like to quote Jack Hooper, a principal advisor to LIC NZ.

"Select bulls that have been proven in progeny test systems whose operation is similar to the way in which you wish to farm."

With that view from an "Eagle" I hope you enjoy this edition of Milk and Honey as I am sure you will not only find it interesting but hopefully of value to your business.

We at Genimex, from our great suppliers through our valued A team of agents will ensure that you breed:

FERTILE, HEALTHY PROFITABLE DAIRY COWS.

Chris Cloete

HOOF HEALTH

VIKINGGENETICS
Breeding for what truly matters

VIKING HOOF HEALTH

Hoof trimming and hoof care in dairy cattle happens all over the world and most professional hoof care specialists have and use similar equipment and have the required training and experience to do the job efficiently and effectively.

So what sets the countries that are part of VikingGenetics (Denmark, Finland and Sweden) apart from the rest?

It all boils down to the database. They have a very unique system that each and every time an animals hooves are evaluated, whether treated or not, that information is entered into the national database. The evaluation on each hoof consists of 10 different disorders. From the evaluation of this data the HOOF HEALTH index is calculated and published.

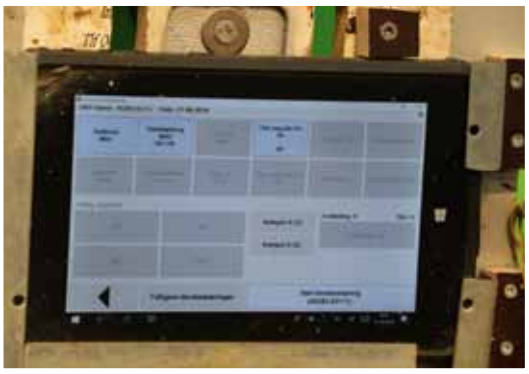
Trimming in progress

Touch screen to enter herd and animal details

Based on this unique information, our index is capable of describing the bull's daughters' genetic ability to resist hoof diseases, including breeding values for seven sub-traits:

- Sole Ulcer
- Sole Hemorrhage
- Heel Horn Erosion
- Digital Dermatitis + Interdigital Dermatitis
- Verrucose Dermatitis + Interdigital Hyperplasia
- Double sole + White line separation
- Cork screw hoof

Entering the findings and treatments undertaken on each hoof of each cow onto the National data base via a touch screen pad.



The touch screen where the data is entered at the end of each day the data is uploaded to the central data base

Well trained and experienced trimmers doing what is necessary

See the table for the extent of the Hoof Health data entered into the national database in 2017. Generally every animal in a herd is checked twice a year and all info, good or bad is put onto the database.

Country	Animals	Herds	Trimmers
Finland	144324	4066	32
Sweden	421610	4832	65
Denmark	614363	5694	67
Total 2017	1180297	14592	164

This data is used to calculate an index for Hoof Health. Using the Hoof Health index as a selection tool not only prevents hoof disorders but it also has a high correlation to longevity thus aiding to the breeding longer lasting cows. M&H

The whole unit is placed where the cows are housed and cows are brought through at in such a way that none are missed

The truck on which the units is transported equipped with a crane to place the trimming unit amongst the cows

Chris Cloete

Why Hoof Health Matters

DOES IT REALLY MATTER, CAN WE BREED FOR IT AND WHAT IS IN IT FOR ME?

VIKINGGENETICS®
Breeding for what truly matters

VIKING HOOF HEALTH™

DOES IT REALLY MATTER? YES

In studies done in Viking countries, Denmark, Finland and Sweden the financial loss of hoof disorders per case is very significant. For example:

- Sole Ulcer Costs €1310.00/case
- Digital dermatitis Costs €200.00/case
- Heel horn erosion Costs €200.00/case

The unseen losses of hoof disorders are when the hoof disorders are not seen and the cows production and reproduction ability is negatively effected.

The Hoof Health index as calculated by Viking Genetics is only possible due to the registration on the national data base of any treatments done by hoof trimmers. The Hoof Health index includes 10 hoof disorders grouped into seven sub-traits.

CAN WE BREED FOR IT? YES

We can certainly breed for it, we do however know that the heritability of Hoof Health is relatively low, only 4% compared to other traits. Research does show that the prevalence of hoof disorders is considerably lower in progeny of sires with a favorable Hoof Health Index.

Breeding/Genetics is a long term solution, improving the environment is a short term solution to hoof issues. Walkway surfaced with the right material is one environmental factor that comes to mind.

The Hoof Health Index is correlated to other traits in the NTM.

Correlation with	Longevity is	35%
	General health	25%
	Daughter fertility	23%

These high correlation's means that if you breed for Hoof Health you will improve these traits as well.

WHAT IS IN IT FOR ME? SIGNIFICANT REDUCTION IN HOOF DISORDERS AND HEALTHIER COWS

Within the Holstein Breed

A bull that has a Hoof Health index of 120 will have 60% less:

Sole ulcer's, Verrucose dermatitis, Interdigital Hyperplasia and cork screw claws.

A bull that has a Hoof Health index of 120 will have 16-24% less:

Digital & interdigital dermatitis, heel horn erosion, sole hemorrhage, double sole and white line disease. M&H

Claus Langdahl, Breeding Manager VikingHolstein

REMARKABLE GENETIC PROGRESS FOR VIKINGHOLSTEIN:

50 NTM units in 15 years

From 2001 to 2016, the average Nordic Total Merit (NTM) of VikingHolstein bulls has increased by +50 NTM units in total, which is an amazing genetic progress. Table 1 shows this improvement in detail and where it is coming from.

Important traits such as production, udder, female fertility and udder health have improved the most.

The trait that has made the greatest progress is longevity with 33.7 units. This genetic progress has made it possible to now have a high-producing, healthy Viking Holstein cow with the potential for high lifetime production.

** Hoof health has less improvement than other traits since it was not introduced to NTM until 2011.*

TABLE 1: AVERAGE GENETIC LEVEL OF VIKINGHOLSTEIN BULLS BORN IN 2016 AND THE GENETIC PROGRESS COMPARED TO BULLS BORN IN 2001

Trait	VikingHolstein 2016	Genetic improvement from 2001-2016
Production	114.1	+22.0
Female fertility	107.4	+18.7
Calving ease	107.8	+15.0
Longevity	114.5	+33.7
Hoof health*	105.9	+11.8
Udder health	108.7	+19.9
General health	105.6	+16.6
Udders	114.3	+28.2

HIGHER NUMBER OF COWS REACHING 100,000 KG MILK

There is an impressive development in the number of cows reaching 100,000 kg milk of lifetime production per year. In 2000, fewer than 50 cows managed this per year and today over 350 cows now do so in Denmark. The sires having most daughters surpassing this milestone are T Funkis and V Bojer with more than 225 daughters each.

T Funkis and V Bojer are the two Holstein bulls that have most daughters reaching 100 000 kg milk

This fantastic cow has reached the production of 100,000 kg milk, and being prized for that reason. She is bred by V Haslund x VAR Elvis and is owned by Pour Jacobsen in Thisted in Denmark.

David Chin

MATING 101

Farmers with a good level of reproductive performance need not scramble for the single best AI bull to mate to their best cows.

That's according to recently-published research*, which indicates the greatest strides in genetic gain can be achieved by identifying the herd's worst cows, rather than by identifying the herd's best cows.

In other words, the science suggests farmers are far better-off preventing lower quality stock from producing replacements, focusing instead on using replacement quality semen (from a team of bulls) to mate to, say, the best 80 to 90% of the herd.

The science de-bunks a commonly-held, intuitive, belief that the best way to maximise genetic gain is to mate the herd's top cows to the industry's top AB bull.

METHODOLOGY

David Chin, LIC GM Operations & Service and one of the authors of the peer-reviewed paper published in the Journal of Dairy Science, said the research involved surveying a wide representation of New Zealand herds (as at March 2017).

For each herd, a combination of mating parameters were applied, reflecting various mating strategies. For example:

i. mating one top bull to the top 5% of cows exclusively;

ii. mating the top 95% of cows to a team of bulls;

iii. mating the top 80% of cows to a team of bulls;

iv. nominating 10% of the herd to one bull, etc.

Because random chance has a significant bearing on which cow gets in-calf to an AI mating, and which of those pregnancies results in a heifer being born, each combination of parameters was simulated 1000 times (i.e. to identify how much variation might occur due to chance).

A total of 54 million herd matings were therefore simulated, Chin said.

THE UPSHOT

Findings told a fairly straight forward story.

"For each 10% of the herd's poorest cows that get excluded from generating replacements, the average breeding worth (BW) of the all replacements generated increased by 3.8 to 4 BW, regardless of herd structure or bull team," Chin said.

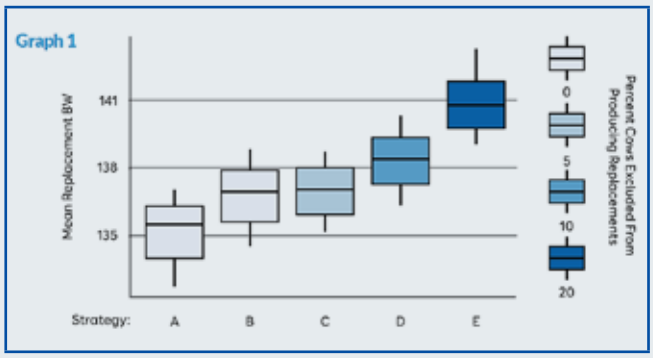
"For many herds, even just excluding the bottom 5% of the cows from producing a replacement is a better strategy than mating the top 20% of your cows to the single-highest BW bull."

However, good reproductive performance underpinned all the findings, because the birth of enough replacement heifers remained paramount.

Chin also acknowledged the necessary trade-off between selection and inbreeding that farmers faced.

EXAMPLES OF FINDINGS

Graph 1 reflects a collection of herds that had the New Zealand average BW with a relatively narrow spread of BW between the cows.



There are five data sets plotted, each reflecting a different mating strategy:

A. shows the outcome of a mating strategy that involved mating the entire herd with a bull team (these herds received an average 136BW return);

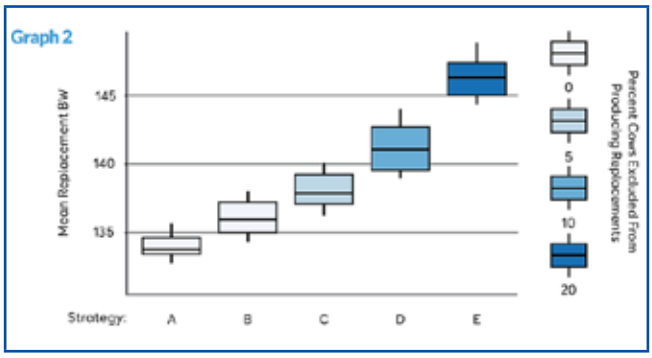
B. shows the outcome of a mating strategy that involved mating the top 20% of cows to one nominated bull; the rest of the herd got replacement-quality semen from a bull team (these herds received an average 137BW return);

C. shows the outcome when 5% of the herd is excluded from producing replacements; all other cows were mated to a bull team and there were no nominated bulls involved (these herds received an average 137BW return);

D. shows the outcome when 10% of the herd was excluded from producing replacements; all other cows were mated to a bull team and there were no nominated bulls involved (these herds received an average 138BW return);

E. shows the outcome when 20% of the herd was excluded from producing replacements; all other cows were mated to a bull team and there were no nominated bulls involved (these herds received an average 140BW return).

Graph 2 displays the same situation, but reflects a collection of herds that, despite having the New Zealand average BW, had a large variation between the cows (i.e. the spread of BW between the best cows and the worst cows was very wide); therefore, outcomes are more extreme.



Chin said use of bull teams such as LIC's Premier Sires remained an excellent strategy at AB time, but New Zealand farmers could better-utilise their money, and make greater gains, by using the product smarter.

"It just takes a little more effort in knowing which cows to, and which cows not to, target the product at," he said.

* Johnson T, Eketone K, McNaughton L, Tiplady K, Voogt J, Sherlock R, Anderson G, Keehan M, Davis SR, Spelman RJ, Chin D, Couldrey C. (2018) Mating strategies to maximize genetic merit in dairy cattle herds. Journal of Dairy Science;101(5):4650-4659. doi: 10.3168/jds.2017-13538

VikingGenetics Trip

8 - 12 OCTOBER 2018

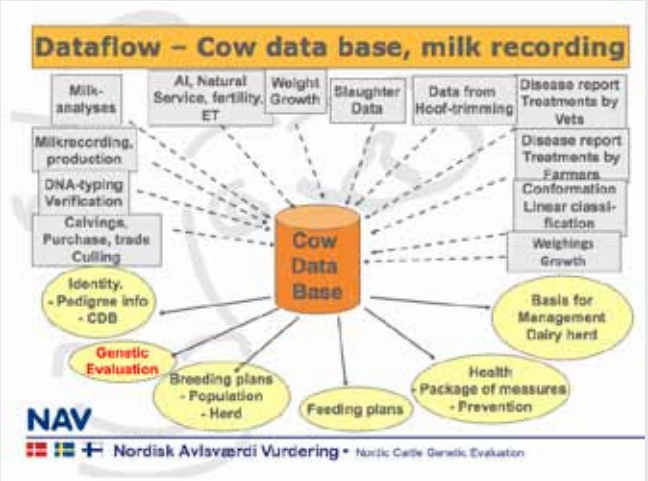
On 10 October 2018, Britt Stanton and I spent a morning at SEGES – Danish Agriculture & Food Council, Cattle. Their prime objective is to identify the commercial potential in agriculture to provide Danish farmers with the best tools for running their businesses more profitably while taking into account environment and animal welfare. SEGES is part owner of the NAV (Nordic Cattle Genetic Evaluations) who calculates breeding values for the VikingGenetics sires available worldwide.

Our time focussed on the Nordic registration system and data collection, from a breeding perspective. We looked at traits and basic registrations, data flow, validation of data and genetic evaluation.

What makes the VikingGenetics product so successful worldwide is the long history of collecting data on central databases. Large amounts of high quality data enable the extensive and exhaustive evaluation of the three national breeding herds (Denmark, Sweden & Finland).

Collectively this evaluation is on 70 000 VikingJerseys, 590 000 VikingHolsteins and 240 000 VikingReds.

Dataflow chart of what is recorded on the national database and how it is used.



What is clear from the chart is the volume of data making it onto the database. What must be realised is the legitimacy of this incoming data. From all calvings, data is uploaded by farmers on handhelds or through apps recording still birth (mandatory), calving ease and calf size. Milk data is recorded by technicians (6 or 11 times a year). Milk sample data is transferred directly to the database. Currently only AMS robotic milk machines transfer all data directly to the database. Data validation is constantly carried out with alarms for extreme values in kg milk and % solids, validation of cow numbers, procedures for the correction of errors made by farmers or technicians and comparisons of milk recording data and bulk tank volume. Equipment is calibrated yearly in accordance with ICAR standards. In total, 90% of all Nordic cows are in milk recording. Fertility data is recorded by farmers and AI technicians. Hoof trimming data is uploaded by highly trained Hoof Trimmers (article in magazine). Once cattle are slaughtered, the slaughter houses transfer carcass weight, EUROP classification and FAT score directly to the database.

Due to difficulty in measuring disease registrations objectively, only data from herds complying with strict rules are used in genetic evaluation and for breeding purposes the, more than 80 codes are pooled within four categories i.e. udder diseases, reproductive diseases, metabolic diseases and feet & leg diseases. This system has been harmonized across all three countries. 90% of all cows are in disease registration and 40% for hoof diseases.

Flexible classification software is used for the 24 confirmation traits which is used by trained classifiers and is ICAR approved and recommended by Interbull. Currently 35% of Nordic herds use "whole herd" classification.

The volume and accessibility of data is best understood through an example.

Practical example:

In the Nordic countries, they have a central database where veterinarians and hoof trimmers record all clinical diseases on each and every cow. By registering the actual incidence, instead of going for a correlated trait, the breeding values are much more reliable. For instance, in the Nordic countries they register clinical mastitis, while most countries use somatic cell score as an indicator. The correlation between somatic cell score and clinical mastitis is only 0.6, meaning it is not the same trait. The same goes for hoof health and the "Feet & Leg" index, where the correlation is only 0.25, meaning that you will only get better hoof health when relying on the Feet & Leg index in one in four cases.

Chris Cloete

What makes genetics from VikingGenetics special and unique

"BREEDING FOR WHAT TRULY MATTERS"

NTM - NORDIC TOTAL MERIT

- Includes all traits of economic importance
- Includes more than 90 sub traits combined into 14 main traits
- Based on a large and comprehensive data base

WEIGHTINGS WITHIN THE NTM

HEALTH **50%**

Udder Health, daughter fertility, longevity, hoof health, general health, calving, young stock survival.

PRODUCTION **30%**

Production index (Milk kg, Protein kg and Fat kg)

CONFORMATION **20%**

Udder conformation, feet and legs, milkability, temperament

A SIMPLE SYSTEM

NTM 0 is average

EBV's for individual traits 100 is average

	AVERAGE	GOOD	SUPER	SUPERIOR
NTM	0	>+10	>+20	>+30
EBV	100	>110	>120	>130

Bulls with an NTM of over +20 Represents the top 2,5% of the breed

Bulls with an EBV of over 120 Represents the top 2,5% of the breed

The Viking populations (Denmark, Finland and Sweden) are of significant size and production levels.

	Cows	Kgs Milk	Fat	Protein
Viking Jerseys	69,670	7,035	5.87%	4.12%
Viking Holsteins	590,783	10,273	4.00%	3.40%
Viking Red	220,000	9,095	4.40%	3.50%

VIKINGGENETICS®
Breeding for what truly matters

Britt in Wonderland

VIKINGGENETICS Breeding for what truly matters ... THROUGH THE LOOKING GLASS Genimex

On my trip to Denmark in October 2018, I felt like Alice in Wonderland peering through the looking glass and seeing a world of beautiful cows, efficiency, a national breeding plan with a vision, management systems to die for and a truly honest system.

This trip was slightly different than the last and I got an inside tour of how the cogs of the Viking system turn. I am not one for big words and scientific explanations (I leave that to the clever people), but even I was blown away by the efficiency of the Viking systems and how much data they can access and use to the benefit of the farmers. At times it was rather depressing listening to how far advanced they are and how much that gap has widened since my last trip. But at the end of the lectures and visits to research farms etc, I came to the conclusion that the Viking systems is what it says it is and even if we are light years behind we can have faith in their figures and facts and that gave me a sense of pride and renewed confidence …. this path has so much value to add to our farmers success.

So I will leave all the scientific stuff to Simon and get down to what I know and love best … cows cows and more cows. On this tour we were able to spend some time with the hoof trimmers to see all the information they have to put in for all feet trimmed and actually witness the "hoof health index" in action. The efficiency with which these fellows work is something to behold, the time it took to trim the feet was minimal and the cows were not away from the feed-bunk for long. The touchpad on each trimmer's chute was simple to use but captured so much information that one can see why the Hoof Health index is such a useful tool, it is based on actual on farm recordings of all hoof problems. All this information is on the database and the farmers have a detailed report of each cow so he can track her history and make good culling decisions.

On this tour we saw a number of Holstein herds. Once again I was impressed by the general strength of the animals, their udders and feet. At one herd, where in my opinion the cows were rather well conditioned, the production figures were almost at 14000kg herd average and they were doing it effortlessly. The bulls that I really enjoyed seeing in lactation since my last visit was Blush, Odense, Fiery and Midgaard. The Blush daughters are everything his linear says. Average size, powerful cows with great udders and legs. I have always said that Miracle is a very under used bull in SA, I saw 3+ lactation daughters still in the herds and looking youthful with great great udders. We were lucky enough to see Miracle at the bull station and it was like seeing To-Mar Blackstar on steroids. Just like Blackstar he shows tremendous body depth, medium size and just an impressive specimen. We saw high NTM daughters at the Viking Heifer Flushing facility, with such modern pedigrees that one suddenly realizes the speed which genetic progress is being made.

On this tour once again I was blown away by the uniformity of the Viking Jersey herds, a testament to a national breeding program that everyone has bought into and trusts. If you look back at the breeding goals the Viking Jersey's have set in the past and the success of achieving these goal, you have to think of Dr Phil's saying "the best predictor of future behavior is past behavior" … then the future

Viking Jersey cows will continue to tick all the boxes!

On my last trip I fell in love with 2 bulls daughters … Hilario and Herodot. All I can say is that the Hilario daughters have matured into the most amazing cows, and we saw a lot.

The depth and dairy strength are "batch stamped" on them all along with incredible udders. As I said earlier it was depressing to see how far we are behind with data etc but on the cow front we are right there with the Danish progeny in SA. If I think of the Hilario daughters at Arno Theron, they are a carbon copy of what they look like in Denmark, so to the Broiler, Zuma and Holmer daughters. I was hoping to see daughters of Rodme, Hihl, Hoj and Huzar on this trip and I was in luck. The daughters of Rodme were really good looking, well put together young cows with great udders and attachments. I think as they mature they will become a similar type to Hilario. The Hoj daughters were very uniform, medium sized with good udders and they were producing well. The Hihl daughters are good uddered, hard working cows. As usual we saw daughters of Zuma, May and Link, Lure and Hulk and they still impressed me. We saw heifer calves of Hitman and Quintana. The Quintana heifers are stylish, well put together heifers and I am sure they will be seen in the show strings. The Hitman heifers showed great balance and strength. We saw the highest NTM jersey heifer a Hitman with +31NTM. I also saw some Huus heifer calves in the hutches and they looked like typical Viking Jersey calves, robust and uniform.

2nd lactation Hilario

Third lactation Blush

So once again I walk away from the Viking Jersey cows feeling confident that what I saw would be replicated at home, it has happened already and continues to grow. I think if people took the time to look at the current Danish cow in SA, without harping on about what the old Danish cow was, and see what she has become, a lot of people would have to eat humble pie because it is no longer so easy to bash the Danish cow as she is creeping into herds all over the country and doing exactly what the Danish system says she will.

As our trip came to an end with a lovely evening in Copenhagen, I had time to reflect on what I had seen and heard. Yes we in deep dark Africa are far behind in the available data our farmers and the industry have to make good management decisions, and as sad and depressing as this is, we can at least take heart from the fact that we have access to genetics that come from an honest, proven system like VikingGenetics, our Danish progeny are doing exactly what their linear and index predicts and they are improving all the time. For those who still have blinkers on …wake up, open your thinking because you are missing out on what is happening through the "Looking Glass". M&H

Simon Alderson-Smith (Genimex), Vagn Lindy Petersen, Peter Larson (Viking Genetics) Christian Lindy Petersen and Jonas Andreassen at the beautiful Adelgaard Jersey herd

New Zealand cows doing what they do best, eat grass to make milk solids. On the farm of Drewe and Tamara Finlay

Livestock Improvement Corporation NZ (LIC)

INTERNATIONAL CONFERENCE 2018

"There is always room for improvement"

In December 2018 LIC hosted an international conference for their subsidiary companies and distributors from around the world. Held at Newstead in Hamilton New Zealand.

There were delegates from Argentina, Brazil, Uruguay, Chile, Australia, UK and Ireland and of course South Africa.

Trina Dunning (International Manager LIC and co-ordinator of the conference) with the very able translator José Garcia-Muñiz from Mexico

On the agenda were speakers from within LIC and well as a chance for a delegate from each country to present what the market is like in their country and the challenges they face in their market. The interesting part was that the markets in each country were different yet had similar challenges and solutions. In each country the same opposition was present and the same opposition, without naming them were guilty of dumping cheap semen just to clear their tanks.

The distributors all agreed that LIC was seen as the leaders in the field of genetics for the production of milk off pastures and there are many followers.

Here are a few take home messages from the presentations by the LIC speakers.

MALCOLM ELLIS - GM NEW ZEALAND MARKETS

There has been an increase in use of A2A2 bulls (435 000 units of A2A2 fresh semen used in 2018)

There has been a growth in herds using only AI and no bulls as seen in the herds using AI in January. (951 herds used AI technician services in January, 1019 herds using 63+ days of AI)

SARAH MIDDLETON - DIGITAL AND SOCIAL MEDIA

As at October 2018 LIC had 3584 Twitter followers and 10755 Facebook followers.

50,9% of their Facebook Audience was Female, 48,5% Male and the balance were unknown.

Of the 10755 Facebook followers 4200 were in the age group of 25-34.

David Kennedy (International Operations Manager LIC and very valued Genimex friend) Mario Alverez (Director Gensur Brazil) and Trina Dunning (International Manager LIC) share a humorous moment at the final function.

JASON SZABO - MARKETING MANAGER LIC

LIC, through communicating with their clients determined that it was time for a new direction in the marketing actions. There was a need to reconnect with clients.

LIC is at the CORE of Livestock Improvement in New Zealand and all its activities need to focus on just that.

The new key phrase is:

"THERE IS ALWAYS ROOM FOR IMPROVEMENT"

MIKE WILSON - HEAD OF MARKETING AND PRODUCTS

When speaking about Solution sales the following must be considered

"By following an effective process, you will improve your relationship with your customers for their herd and farming business and LIC will be better positioned as a high quality provider of herd improvement solutions.. This is what we at Genimex strive towards in the South African market.

The delegates at the LIC International conference held in December 2018 seen here on the pastures of the LIC Innovation farm just outside Hamilton.

JAIR MANDRIAZA - REPRODUCTION SOLUTIONS ADVISOR

Fertility is a reflection of the genotype of the animal and reproduction is a reflection of the genotype combined with environmental and management factors.

Key management areas that effect fertility are:

Calving pattern, Heifer management, nutrition and body condition, heat detection, service bulls, genetics, AI practices and cow health.

Mating in seasonal herds is a race against time: 12 weeks of mating plus 282 days of gestation plus 83 days of calving.

With the move from AI and Bulls to just AI there was an improvement in most aspects of the reproductive performance of herds. See page 20 for more information on herds that use only AI and no bulls during their mating season.

JACK HOOPER - PRINCIPAL ADVISOR

Select bulls that have been proven in progeny test systems whose operation is similar to the way in which you farm. In New Zealand our Sire proving Scheme farmers are selected to be representative of our commercial farmers that are a true reflection of pasture based dairy production".

The Breeding Worth (BW) formula was recently updated to put more emphasis on Milk Fat. Body Condition Scoring was added.

See pages 26 and 27 for the new weighting of the BW.

Biosecurity has been stepped up in in NZ and gentlemen do what gentlemen have to do

Joyce Voogt (Technical advisor LIC International) with Drewe and Tamara Finlay of Mangahei Farms

HERD VISIT - MANGAHEI FARMS OF DREWE AND TAMARA FINLAY

GENETIC MERIT

BW of herd 143 and PW 192 with 100% recorded ancestory

260 Cows producing 504kgMS/Cow in 265 days

Breed mix: Crossbred F8J8 (Range F4 to F12)

Average herd liveweight 490Kgs

Breeding Policy	2017	2018
	7 weeks AI, 2 week bulls and 10days SGL	10,5 weeks AI only

Breeding objective High BW, good udders, capacity and an F8J8 cow.		
2017 reproductive performance	6 week in calf rate	79%
	Empty rate	5%
	Mating length	80 days
	Conception rate	61%
	Service per pregnancy	1,64

Interview by Simon Alderson-Smith

Amadlelo Manager in New Zealand

Kabelo Mowase, an employee of the Amadlelo Dairy Project, is currently halfway through a one year training internship in New Zealand on a program supported by LIC New Zealand, Amadlelo and Genimex. The thirty year old was hired by Trevor Manson of Methven Dairies as a Dairy Assistant on his 398 hectare property in the Cantebury region on New Zealand's South Island.

Genimex recently caught up with Kabelo and got the following feedback:

FARM INFO

Methven Dairies has 398 ha of effective pasture with Ryegrass and Clover being the predominant pastures. Cows winter six to eight weeks off farm on Kale. This is a low input system peeking with 1500 KiwiCross™, Holstein-Frisians and Jerseys. As of 29 January they started 3 in 2 milking. They breed cows for production and fertility for a ten week calving spread.

FIRST IMPRESSION WHEN ARRIVING IN NEW ZEALAND

Welcoming country with friendly people from all over the world. Arriving in winter was a shock. The standard of farming is extremely high with the latest technologies being used. Farms are large, very clean and everyone is organized. Everyone gets on really well and teamwork makes for a great working environment.

WHAT SURPRISED YOU THE MOST AND WHAT LESSONS HAVE YOU LEARNED?

Irrigation standards and quality irrigation coming from massive pivots. The large farms are run by minimal staff when compared to South Africa. With the correct planning, management and time allocation you are able to work smarter and more effectively with less people. Costs around farms can be reduced from medicines and machinery. Pasture management without wasting feed. Reduce costs by consuming more pasture and using less supplements. Cull cows that don't bring in money.

Kabelo enjoying the scenery in New Zealand

WHAT ADDITIONAL ACTIVITIES HAVE YOU BEEN EXPOSED TO?

DairyNZ Biz Start course. It focused on quick strategic planning tools, steps to wealth creation, pathways for progression in the dairy industry, a successful career in dairy farming and shortcuts to progression. Study groups and several farm visits including Lincoln University dairy farm. The Pasture Summit held in November 2018.

ADVICE TO THE NEXT ROUND OF INTERNS

One must be willing to learn and work hard. It is challenging and you need to focus because you are given a lot of responsibilities to finish on your own with no one who keeps checking on you. It is different from South Africa in that you are encouraged to ask questions and be interested in every role on the farm. In New Zealand everyone is a herdsman, tractor driver, pasture manager and any other task given to you.

Genimex wishes Kabelo all the best for the second half of his internship and we look forward to welcoming him back home where he will share his experiences with his Amadlelo colleagues. M&H

Non-Cycling Cows

AND STRATEGIES FOR DEALING WITH THEM

Joyce Voogt

The dry-period phase of the dairy cow's lactation cycle allows replenishment of the mammary tissue and prepares her for maximum production in her next lactation, which is initiated by calving.

Optimal calving intervals to maximise production efficiency have been well investigated and a calving interval of 365 days is regarded as optimal in seasonal or block calving herds.

With a 282 days of the year being required for pregnancy, the cow is left with just 83 days to recommence cycling, be mated and conceive if she is to meet this target. That's a tall order, but one which many cows manage to achieve in New Zealand, where the national average calving interval sits between 368 and 370 days most years.

In this article we take a look at one of the potential drags on achieving this performance for dairy herds – the issue of anoestrous or non-cycling cows.

We look at how cows become non-cyclers, how to identify them and what you can do to reduce their numbers in your herd.

Non-cycling is the most common form of infertility in New Zealand herds. These are cows that haven't had an observed heat before mating starts, which results in:

- reduced submission and conception rates
- fewer days in milk the following year than their cycling herd mates.

Having too many non-cyclers will prevent you reaching the 78% 6-week in-calf rate target because they decrease:.

- 3-week submission rate
- Conception (pregnancy) rate

TWO TYPES OF NON-CYCLERS

There are two types of non-cyclers – true non-cyclers that are actually anoestrous, and apparent non-cyclers, which have ovulated but the heat went undetected.

Apparent non-cyclers:

These may be cows that have ovulated (their ovaries are 'cycling') but haven't had a visible heat. This is sometimes called a silent heat. About 70-80% of cows won't have a visible heat at their first ovulation after calving. Alternatively, the cow may have cycled and shown visible heat, but the heat was simply missed.

True non-cyclers

Cows that haven't started ovulating again after calving – also called "anoestrus".

HOW COWS BECOME NON-CYCLERS

Many factors can contribute to a cow being anoestrous.

Calving date

Cows that calve after week six of the calving period are less likely to resume cycling by mating start date.

Poor heifer rearing, especially in Friesian heifers

Underweight heifers have a longer interval to first heat. Unless treated, their submission rate will be around 10% lower.

Young cows

More first-calving heifers are treated as non-cyclers compared to mature cows. First calvers take an extra 10 days to start cycling post calving. You can ease this problem by mating the 15-month replacement heifers a week or two before AI starts in the milking herd.

Breed

More Friesians – especially Friesian heifers – are treated as non-cyclers, compared to crossbred or Jersey cows in New Zealand.

Body condition score (BCS)

Calving condition score, condition loss from calving to mating, and BCS when mating starts, all affect the rate of non-cycling.

- Thin cows take longer to start cycling and have lower 3-week submission rates. These are around 10% lower than cows (or heifers) that calve at the recommended BCS of 5.0 (or 5.5 for first and second calvers).
- Cows that calve above 5.5 get minimal benefit from their greater body reserves.

Abnormal calving and uterine infections

Cows with assisted calvings, twins and uterine infections are more likely to be treated as non-cyclers.

Heat Detection

If heat detection is sub-optimal, some cows may be wrongly identified as a non-cycler (missed heats).

IDENTIFYING NON-CYCLERS IN YOUR HERD

To identify non-cyclers, use pre-mating heat detection. This involves using tail paint or heat mount detectors.

If you're using tail paint, paint every cow in the herd with a common colour. When cows cycle and lose their tail paint, repaint them with a second colour. Two weeks after applying tail

paint, about half of the cycling cows will have been identified. At three weeks (average length of a cow's cycle) those cows still with the original paint colour are your non-cyclers.

When you start pre-mating heat detection determines when you can identify your non-cyclers.

- Four to five weeks before mating – identify non-cyclers one to two weeks before mating.
- Three weeks before mating – identify your non-cyclers at the start of mating.

Once you've identified your non-cyclers, decide which cows need intervention and what option you'll use.

WHAT YOU CAN DO WITH YOUR NON-CYCLERS

The earlier you identify your non-cyclers, the more choices you'll have at your disposal. If you leave it too close to mating you'll have no other option but hormonal treatment.

Do nothing

Success is only likely in herds that meet pre-mating cycling targets of 75% ten days out from mating and 85% at mating start date. May result in a low submission rate and poor reproductive outcomes with few options for addressing these .

Run them in a separate mob

This helps take pressure off vulnerable cows. Begin at least four weeks before mating for best results. But it can add complexity to the stock management workload, such as:

- time and effort
- rotation planning
- extra electric fencing
- setting up breaks.

Once a Day (OAD) milking

Begin six weeks from mating start date. Run cows in a separate group for best results. May cost you $33 in lost milk yield for every 28 days a cow is on OAD. Consider these production impacts when looking into this option.

Hormonal intervention

The only effective option available once you're close to mating is hormonal intervention. It is generally more profitable the earlier you treat your cows because it:

- generates earlier AI calves
- allows returns to come in at the start of the second round
- reduces bull power demand in the third round of mating when compared to delaying treatment to three weeks into mating
- results in more days in milk and more time to recover from calving next season
- research suggests it does ***not*** reduce empty rates at the end of the mating

Early intervention means more animals will need treatment, which can affect your cash flow. So, one strategy is to decide how many cows you want to treat. Select that number from your non-cycler group, but only those worth investing in. Focus on your young, high genetic merit and/or high producing cows. This will help you contain costs while maximising the benefits of early intervention.

Your vet can do a cost-benefit analysis and give you tailored advice for your herd.

Because your non-cyclers' heats are going to synchronise, you'll need more semen and technician capacity. Give your AI technician/ semen supplier plenty of advance warning of your synchrony programmes.

Preferential feeding

Increased feeding during lactation can benefit reproduction in cows experiencing a feed pinch. In herds with adequate nutrition, the effect on reproduction is negligible.

For some farmers a more attractive option for addressing a feed pinch may be to reduce stocking rate. Stocking rate is the number of cows per hectare or acre. Review your situation with your rural professionals.

Teaser bulls

Teaser (vasectomised) bulls are not an effective option for dealing with non-cycling cows. They're good heat detectors, but there's no robust scientific evidence that they stimulate cycling.

If heat detection is sub-optimal or heats are weak and difficult to detect, vasectomised bulls might help reduce the number of missed heats during mating. They do carry disease and injury risk, as they are still bulls.

MINIMISING NON-CYCLERS LONG TERM

If your herd is consistently more than 15% true non-cyclers, you need to address underlying management issues.

Long term prevention means minimising the risks.

- Grow your heifers to achieve liveweight and body condition targets at 22 months.
- Manage your two- and three-year-old cows carefully.
- Calve cows at BCS target (NZ scale 5.0 for 4+ years and 5.5 for two- and three-year-olds).
- Dry cows off on BCS, calving date and feed supply to ensure targets for BCS and feed on hand at calving are met.
- Minimise health issues.
- Reduce the percentage of late calvers in your herd.
- Keep BCS loss to under one BCS unit between calving and mating.
- Make sure cows are BCS 4.0 to 4.5 at mating.

Disclaimer: Advice given is of a general nature only. Seek independent professional advice for your own farm situation. M&H

Nicola Hemming, Reproduction Solutions Advisor, LIC

REPRODUCTIVE PERFORMANCE OF ALL AI HERDS

For several years in New Zealand there has been a growing trend towards the exclusive use of AI mating in seasonal calving herds.

In spring 2018, with the heightened awareness of the role of biosecurity in protecting herds from disease incursions, there were indications that even more farmers were considering going All AI/no bull last year.

To provide farmers with some insights into the reproductive (repro) outcomes of herds using only AI for mating, we pulled together data from the 2014 to 2017 spring matings and looked at the performance of herds that used only AI (All AI herds)and compared it with herds that used AI + natural mating bulls (AI + Bull)*.

How many all AI herds are there?

The number of herds doing all AI has been increasing over time. Across the 2014 to 2017 seasons, there were between 290 and 417 farmers doing All AI.

Performance of All AI herds compared with AI + Bull herds

Combining the four seasons' worth of data together we looked at the performance of All AI herds compared with the AI + Bull herds. The results indicated that the All AI herds tend to have similar or slightly better reproductive performance than the AI + Bull herds.

Average	AB + Bull herds	All AB herds	Difference
6-week-in-calf rate	66.2%	67.7.%	+1.4%
Not-in-calf rate	16.6%	17.1%	+0.6%
Total Mating Length (days)	76.0	76.4	+0.3
Herd 3-week submission rate	79.0%	83.6%	+4.6%
First calver 3-week submission rate	80.6%	85.3%	+4.7%
Conception rate	52.6%	51.3%	-1.3%
AB Mating Length (days)	45.3	76.4	+31.1
Number of herds	13996	878	

How were the all AI herds performing before going all AI?

In the year before switching to all AI, these herds were higher performing, larger, and already doing around 8 weeks of AI.

What happens to their results when they switch to all AI?

The year that the herds switched to all AI, there was a slight drop in reproductive performance, but in the second and third years of being all AI, performance lifted to a similar or better level than it was before the switch.

In addition, farmers seem to be getting better at switching to all AI. When we looked at the results for the herds that went all AI on an individual season basis (e.g. just looking at herds that went all AI in 2015 vs those who went all AI in 2016), we saw that any detrimental impact of switching to all AI has been reducing.

Do farmers who go all AI stay with it?

The results indicate that just over half of the herds that go all AI continue to do all AI for a second season, but only around a third go on to do a third or fourth all AI season. In light of heightened farmer awareness around disease incursion risk and the drive to be more self-contained, the rate of farmers sticking with all AI may increase.

What happens to the results of the herds that don't stick with all AI?

The year that the herds changed back to AI + Bull, their 6-week in-calf rate and not-in-calf rates returned to, or were better than, the performance they had before going all AI.

Herds that changed back to AI + Bull tended to have a greater drop in performance in their first year of all AI than those who stayed with it.

Together, these two results suggest that going all AI is not for everyone.

Summary

The results indicate that in general herds that are all AI have a very similar repro performance to AI + Bull herds, but there is a journey that All AI herds tend go through over a couple seasons when switching to only using AI.

In other words, going all AI may not be for everyone, but sticking with all AI can produce similar or slightly better repro performance than AI + Bull herds.

**Herds included in the analysis for this article were spring calving seasonal herds that had a Detailed InCalf® Fertility Focus Report. The seasons analysed were the 2014 to 2017 spring matings. The reproduction measures analysed were generated from data and information entered by herd owners and collected by LIC® and DairyNZ®. Accuracy of the results reported here is subject to the accuracy of the data entered.*

Disclaimer: Advice given is of a general nature only. Seek independent professional advice for your own farm situation.

Joyce Voogt, Technical Manager, LIC International

NZ Frozen Sexed Semen Trial Results

This article discusses LIC's 2018 New Zealand sexed semen trial results.

Joyce Voogt

For many years, dairy farmers have been excited about the possibility of using sexed semen to drive genetic gain within their herd. It makes sense; breeding more heifer calves from the best cows while mating lower end animals to other AI options such as beef opens up more opportunities.

However, farmers with block calving systems are also acutely aware of the contribution of a tight calving pattern and high 6 week in-calf rate to farm profitability. In block-calving systems the risks of slower calving pattern must be weighed against the benefits of more AI heifer calves and increased rates of genetic gain.

Sexing Technologies, with its latest advances in the technology of sexing semen, was worthy of serious consideration. With all this in mind, LIC participated in a large trial with Sexing Technologies to assess the performance of the frozen sexed product in New Zealand commercial dairy farms. LIC hoped to see the technological improvements reflected in better non return rates (NRR) for this product on-farm.

THE TRIAL

The blind trial, conducted in spring 2017 across nearly 100 New Zealand commercial spring-calving herds compared more than 12,000 straws of 'control' and 'sexed' straws. There was a good deal of anticipation and excitement about what the trial results would show.

The results clearly showed that there was still a substantial difference between frozen sexed and conventional frozen semen:

The frozen sexed semen was, on average, 13.3 % down on NRR compared to standard conventional frozen straws.

With getting cows in calf being one of the most important parts of any dairy farmer's seasonal focus, the reproductive implications of a reduction in NRR by 13.3% is significant in New Zealand's predominantly block-calving herds. These cows would remain in the dry paddock for at least three further weeks.

IS THERE A PLACE FOR FROZEN SEXED SEMEN?

If farmers are considering using frozen sexed semen across specific cows or sub-groups in their herd, a planned approach and careful implementation is recommended to help mitigate any potential impact on the herd's calving pattern.

Options include:

1. Yearling heifer mating:

Mating yearling heifers to sexed semen 2-3 weeks ahead of the herd.

Their naturally higher average conception rates, along with mating the group well (2-3 weeks) ahead of the herd may help reduce calving pattern impacts.

However,

- Feed budgets should allow for the extra earlier feed demand
- Bulls should be carefully chosen for suitability in yearling matings
- Heifers should be scanned early to identify those in-calf to AI and those in calf to run bulls
- Those in-calf to AI replacement sires should be calved separately to avoid mix-ups

2. Cows:

Mate a selected group of highly fertile, early calving, high genetic merit cows to frozen sexed semen. Potentially do this ahead of the main herd mating start date to reduce the disadvantage for those that do not conceive. The same caveats around feed budgets apply.

Choose carefully:

a. Fertile cows: early-calved, young cows with no uterine infection and a cycle or two under their belt in the pre-mating period will be your best bet.

b. Good cows: don't waste a straw! Choose high merit, healthy, low somatic cell count cows. Interestingly, NZ farmers have culled, on average, 6% of cows with pregnancies created from sexed semen for other reasons. Milk recording information can help you identify the best cows.

c. On heat: Make sure she is on full standing heat; accurate heat detection helps conception rates. If you are unsure, use a conventional straw.

Further specific usage advice on the frozen sexed semen product is available.

Farmers are encouraged to assess the suitability of their herd and to discuss the impact of planned use on their farm system with their professional advisors.

LIC continues to explore options as technology and the wider industry evolves. In the meantime, the product will continue to have a place for targeted use on some farms.

If you are interested, please contact Genimex for more information on bulls available.

***Disclaimer:** Advice given is of a general nature only and results are based on **New Zealand dairy herds.** We recommend you seek independent professional advice for your own farm situation as these results may vary.*

WAAROM MOET EK 'N

TEELBELEID EN DOELWIT HÊ?

Sedert die vroeë negentigs het die beskikbaarheid van suiwel genetika dramaties verbeter. 'n Ras soos die Holsteins het nog altyd die voordeel geniet van baie groot populasies en skielik was al hierdie genetika beskikbaar aan die Suid Afrikaanse suiwelboer. Die Jerseytelers met kleiner populasies, kon nou uit meer as 4 populasies hul keuse maak. Die probleem egter was dat dit baie moeilik vir die teler was om te besluit watter die beste bulle was. Interbull lewer sedertdien 'n baie groot bydrae om ontledings te standaardiseer en genetiese vlakke van verskillende lande te bepaal. Dit is egter nie hul funksie om aan suiwelboere voor te skryf waar hulle genetika moet van koop nie. Elke deelnemende land het hulle eie teelbeleide en rangskik die bulle daarvolgens.

Dit is daarom belangrik vir telers om hulle te vergewis van die gehalte van stelsels asook teelbeleide van die onderskeie lande. Die akkuraatheid en betroubaarheid van data hang beslis ook af van die grootte van populasies en veral die doeltreffendheid van hul genetiese programme. Die Skandinawiese lande (*VikingGenetics*) konsentreer reeds vanaf die vroeë tagtigs af op die gesondsheidseienskappe. Dit is belangrik om te weet dat hulle die leiers is op die gebied en dat die res hul voorbeeld gevolg het. Dit is ook belangrik om kennis te dra van die feit dat 'n indeks soos uiergesondheid en hoefgesondheid in Skandinawië nie dieselfde geïnterpreteer kan word as 'n "soortgelyke" indeks van ander lande nie. Hoe groot is 'n groot koei werklik in Kanada of die VSA in vergelyking met 'n groot koei in Nieu Zeeland of Suid Afrika? Weet ons suiwelboere dit en word hierdie inligting aan hulle deurgegee deur agente wat dalk net die "sale" wil maak?

Figuur 1 .

Interbull Genetiese Vlakke, Jersey

	USA	Denmark	Australia	Canada	New Zealand
Uier gesondheid (SST)	90	101	88	84	95
Lanklewendheid	94	100	89	90	91
Vrugbaarheid	90	101	98	92	99
Uier	98	100	89	98	-

Deense Jerseys het beter uier gesondheid, lanklewendheid en vrugbaarheid. Hulle het ook hoër vlakke van produksie.

In figuur 1 is die nuutste genetiese vlakke van Interbull vir uier en gesondheids eienskappe. Die werk wat deur Viking Genetics oor jare op die gebied gedoen is, is beslis tot groot voordeel van hul suiwelboere en kliënte.

WAT IS DIE VERSKIL?

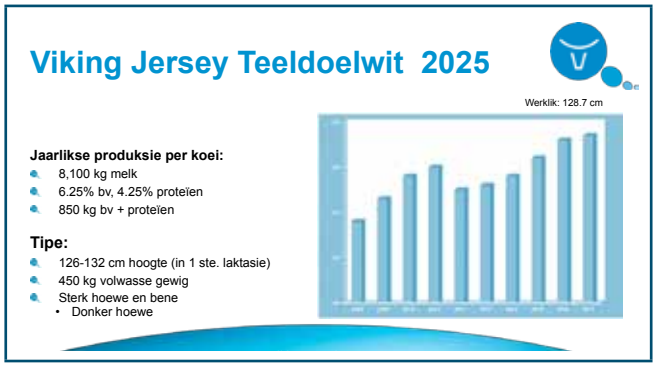
Uiersgesondheid – In Denemarke, Swede en Finland (Viking Genetics) gebruik hulle nie slegs somatiese seltellings om die indeks te bepaal nie maar ook die frekwensie van behandelings. Te veel ander faktore kan 'n invloed op somatiese seltellings hê. (Die verlaging van die gebruik van antibiotika vorm nou deel van hul beleid)

Hoefgesondheid - Tien verskillende hoefsiektes word deur hoef spesialiste "hoof trimmers" geidentifiseer met elke koei wat behandeling moet kry. (Die inligting word verkry met direkte aanmelding deur middel van rekenaars aangebring op die behandelingstafel.) Watter ander lande besit die vermoë om dit suksesvol te doen?

WAT IS 'N TEELDOELWIT ?

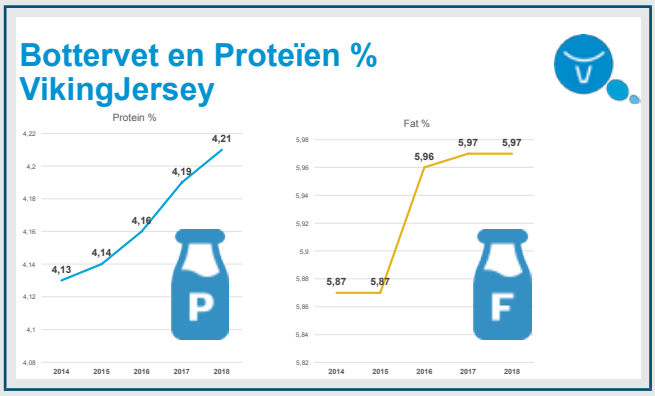
Daar is geen beter voorbeeld van 'n teeldoelwit as juis die een van die Deense Jersey Genootskap nie. In figuur 2 en 3 is 'n opsomming van hul teeldoelwit. Belangrik is om te let op die feit dat hul doelwit vir 2020 reeds bereik is! Hul doelwitte vir 2025 is vervolgens hier uiteengesit. Die huidige produksie vlakke van die Viking Jerseys is 7350 Kg Melk 333 Kgs Vet, 6,01% Vet, 333 Kgs Protein en 4.05% Protein.

Figuur 2.



Figuur 3.

Figuur 4.



In figuur 4 kan die enorme vordering gesien word wat gemaak is op proteïen en bottervet persentasies. Die ras se produksie het egter ook gestyg van 'n 6555 kg in 2007 na 'n uitstekende 7349 kg in 2017! Hou ingedagte dat hierdie resultate bereik word vir die hele populasie van ongeveer 70 000 koeie.

Hoe bereik jy so 'n doelwit ? - NTM

Om hierdie vordering en resultate te bereik moet daar eerstens 'n nationale beleid wees wat deur middel van 'n teel indeks geïmplementeer word. Reeds vir meer as 30 jaar gebruik die Dene die "Nordic Total Merit Index" **(NTM).**

Die eienskappe wat die belangrikste is om die mees ekonomiese koei te teel, word bepaal. (Om te teel vir eienskappe wat nie werklik doeltreffendheid en lanklewendheid bevorder nie is sinneloos.) Mooi groot koeie met goeie toplyne, breed in die bors en ultra hoë agteruiers gaan nie die bankbestuurder noodwendig gelukkig hou nie. Uiergesondheid, vrugbaarheid en produksie bly die belangrikste eienskappe om die mees ekonomiese koei te teel en sal dus die grootste gewig dra. Tans is dit :

50% vir gesonheids eienskappe, 30% produksie eienskappe en 20% tipe eienskappe.

Belangrike tipe eienskappe soos vooruieraanhegting, uierdiepte, ligament en bene en hoewe is ingesluit en die top 20 bulle sal beslis voldoen aan die vereistes.

Die doelwit word dus behaal deur dood eenvoudig die bulle te gebruik met die hoogste NTM waardes. Die geheim van die sukses is egter dat dit deur middel van 'n gesamentlike en nationale beleid deur almal toegepas word.

Johan Müller

Hoe moet ek my teelbeleid implementeer?

'n Suiwelboer moet vertroue hê in die bron vanwaar hy sy genetika kry. Dit sal meebring dat die beleid eenvoudig en uitvoerbaar is. Indien jy uit die Deense populasie die bulle gebruik met 'n NTM van 20 en hoër, gebruik jy die top 2.5% van bulle. Die volgende resultate kan in dié land bereik word met bulle wat 'n hoër as 120 indeks vir 'n sekere eienskap het. (Verder is dit belangrik om te weet dat daar 'n ekonomiese waarde aan hierdie indekse gekoppel is.)

Mastitis frekwensie : 33.6% minder behandelings

Kg melk 305 dae : +572 kg

Kg prot : + 17.1 kg

Kg bv : 21 kg

Dae oop: - 11.2 dae

Die betroubaarheid van genomiese ontledings het geweldig verbeter en die gebruik daarvan het ook toegeneem. Meer as 97 % van die semen verbruik in die Viking lande is afkomstig van genomiese bulle. Dus is die besluit om slegs die hoogste bulle, ongeag of hulle beproef is al die nie, soveel makliker. Nuwe bulle verskyn aanhoudend wat die variasie vergroot. Die Viking groep se beheer van inteling is uiters doeltreffend en ons vind dat nuwe bulle minimaal probleme in ons land veroorsaak, wat inteling aan betref.

Dit is belangrik vir suiwelboere om te bepaal waar hul doeltreffendheid huidiglik is wat die onderskeie eienskappe aan betref. Moderne melkstelsels verseker deesdae dat baie van die basiese inligting beskikbaar is en tekortkominge behoort maklik duidelik te wees. Die aanbeveling sal wees om 'n 10 jaar doelwit daar te stel met duidelike mylpale. Gesondheids doelwitte en produksie (melk bv en prot) moet egter die kern van so 'n doelwit wees.

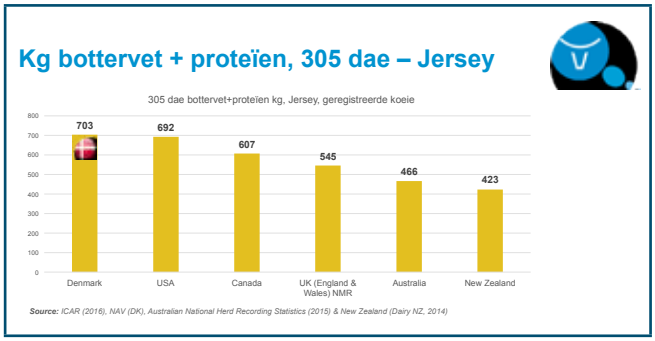
Resultate

Daar is verkeie telers wat die afgelope paar jaar teeldoelwitte baie suksesvol toegepas het. Etienne Zeeman van die plaas Leeurivier Swellendam het byvoorbeeld sy genetiese vlakke vir bottervet en proteien geweldig verbeter, sonder om produksies in te boet. Sien tabel van produksie en melk prys wat Etienne behaal het met sy doelwitte. Let op die verskil in melk prys.

Tienie Durr van Preekstoel Boerdery, se daagliks produksies op 'n kudde van meer as 1000 Jerseys in melk, is die afgelope 2 maande tussen 27 en 30 kg melk met bottervet persentasies van meer as 5%. Jan Russouw wat naby Bethlehem boer, toon soortgelyke resultate. Met 'n stal gemiddeld van 25,2lts teen 5,0% BV en 4,04% Proteïen.

Teeldoelwitte moet dus gefokus wees op die ekonomies belangrikke eienskappe. Moet nie afwyk nie en vertrou jou bron (dus ook agent). Maak seker dat die bron waaruit jy jou genetika kies die betroubaarste en beste is vir die eienskappe wat jy moet verbeter.

In figuur 5 kan ons sien die Deense populasie behaal die hoogste volume vastestof produksies met minder volume melk as byvoorbeeld die VSA. Dus is 'n verdere voordeel dat daar aansienlik minder stres op koeie is.



Tabel: Etienne Zeeman

Parmalat Swellendam	Jersey produsente
Periode	Februarie 2018 tot Januarie 2019

	Lts melk/Maand	Bottervet %	Proteïen %	Somatiese Seltelling	Bakterië	Melk prys Sent/Lt
E Zeemen	191675	5.24%	4.09%	103495	18595	R5.78
Groep Gemiddel	134668	4.78%	3.90%	251883	37458	R5.24
Verskil	+57007	+0,46%	+0,19%	-148388	-18863	+R0.54

Straw Counting

Genimex in cooperation with VikingGenetics has imported a semen counting machine. This has been necessitated due to the large volume of semen being imported in bulk and then on arrival has to be recounted into smaller volumes before further distribution here in South Africa. The machine is produced by IMV in France and allows the semen to be counted out accurately and is under Nitrogen at all times.

The machine in action, note the high level of Nitrogen Vapour and the straws are in Nitrogen

Simon Alderson-Smith and Tanja van Mollendorf hard at work repacking semen with the aid of the newly acquired counting machine.

Economic Values

AND WHY THEY MATTER

Melissa Stephen

The economic values used to calculate Breeding Worth have been updated to reflect world market changes. DairyNZ genetic evaluation developer Melissa Stephen explains how these values are calculated and why they change.

WHAT ARE ECONOMIC VALUES?

Economic values are an estimate of the profit gained from a range of traits that contribute to production, product quality and animal fitness. These values become the weighting factors used to calculate Breeding Worth (BW) for all dairy cattle. BW is the industry index which ranks cows and bulls on their ability to meet New Zealand's national breeding objective: to identify animals whose progeny will be the most efficient converters of feed into farmer profit.

Economic values are calculated annually for milk fat, milk protein, milk volume, liveweight, fertility, residual survival, somatic cell count (SCC) and body condition score (BCS).

HOW ARE ECONOMIC VALUES CALCULATED AND WHY DO THEY CHANGE?

Economic values are recalculated every year with input from several organisations, including Fonterra, DairyNZ and meat processors. These revised economic values become the weighting factors used to produce the BW index in February each year.

They are calculated as 'profit per unit', (e.g. the profit gained from one additional kilogram (kg) of protein). These calculations incorporate major expense and revenue streams for an average New Zealand farm. On-farm expenses and revenues are largely dependent on market conditions, which can shift dramatically over time. Annual updates of BW ensure farmers have the most up-to-date and relevant information available to inform their breeding decisions.

ECONOMIC VALUES - FACTORS AND EFFECTS

1. Milk fat, milk protein and milk volume

These are calculated using a five-year rolling average of the milk solids, volume charge and value component ratio. This rolling average includes three historic, one current and one forecast year. The value component ratio is used to partition the milksolids price into a value for milk fat and a value for milk protein.

To calculate the economic value of specific milk components, we account for:

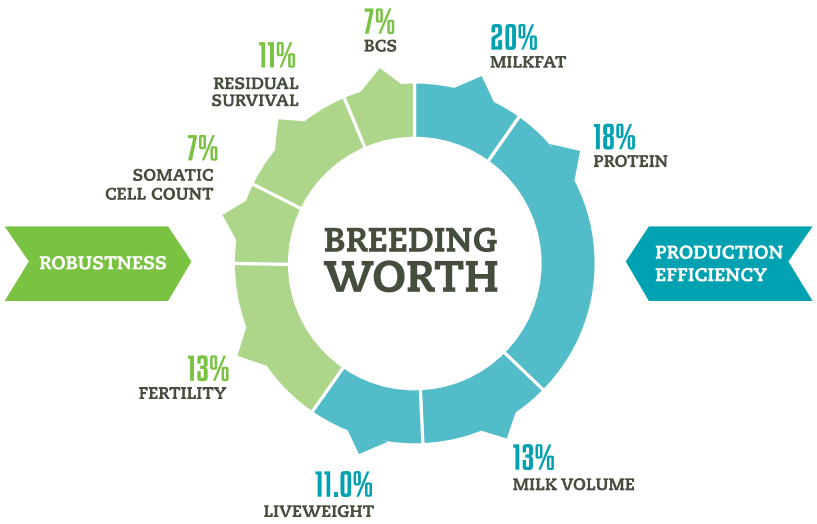
- the dollar value of milk components
- the amount of energy required to produce each milk component
- the reduction in stocking rate required to accommodate the extra energy/feed a cow requires to produce additional milk components.

2. Liveweight

Liveweight differences in cows can affect their maintenance requirements, feed costs, value as a cull cow and the value of their calves. The liveweight economic value accounts for:

- cow maintenance requirements - increasing liveweight can lead to higher annual maintenance feed requirements for the cow
- heifer replacement feed costs - feed requirements are higher for maintaining and growing larger replacements
- cull cow value - heavier cows have more value as culls
- surplus calf value - increasing cow liveweight increases the size (and value) of surplus calves produced.

TRAITS THAT MAKE UP BREEDING WORTH



Graphic produced using 2019 economic values

3. Somatic cell count

Differences in SCC can have a significant economic effect. The economic value for SCC accounts for:

- survival - cows with low SCC will survive longer in the herd
- price penalties on milk supplied - low-SCC cows help keep the bulk SCC down, which avoids penalties via grades from milk processors
- mastitis treatment costs - low-SCC cows have fewer cases of clinical mastitis.

4. Fertility

The economic value for fertility includes value gained through increased survival and value gained through earlier calving dates (i.e. longer lactations). The economic value accounts for:

- survival - strong fertility leads to high survivability for early-calving cows, as they have more chance to get in calf the following season)and therefore won't be culled)
- herd calving distribution - cows with strong fertility contribute a much tighter pattern of calving across the herd, and they themselves generally have longer lactations. This value is offset slightly by the cost of increased feed demand in early spring.

5. Residual survival

The economic value for residual survival recognises that animals with better longevity will reduce the requirement for replacement heifers. The economic value accounts for:

- heifer replacements - a herd with higher survival requires fewer replacements. This is offset slightly by the loss of cull cow income and reduced rates of genetic gain.
- costs and revenues per lactation - cows of different ages differ in their contribution to herd profitability. The proportion of mature cows in a herd will impact profitability.

6. Body condition score

The economic value for BCS represents the improved profitability of an animal that can maintain body condition over her lactation. Cows that lose body condition easily incure costs in two key ways:

- Feed efficiency - it's inefficient for a cow to lose condition and then have to gain it again.
- Days in milk - a thinner cow may have to be dried off earlier, reducing days in milk and, therefore, production and profit. M&H

Key points

1. Breeding Worth (BW) changes will be implemented this month.
2. Economic values are the weighting factors used to calculate BW.
3. Annual updates of BW ensure farmers have the most up-to-date and relevant information available to inform their breeding decisions.

Visit **dairynz.co.nz/ev** to learn more.

Viking Tour 2019

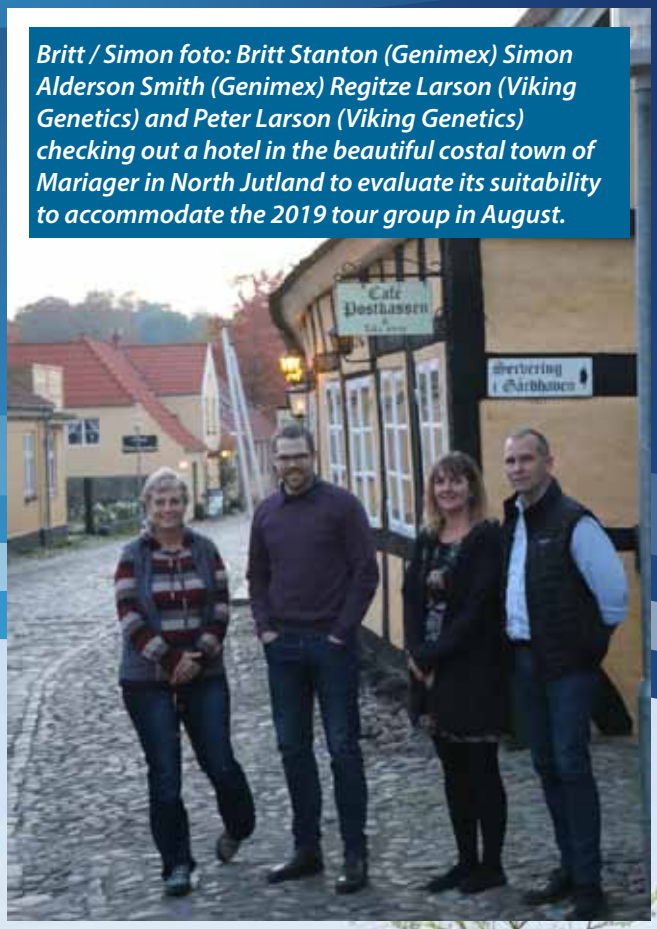
Genimex and VikingGenetics would like to invite all interested Jersey and Holstein breeders to join us on our "2019 Tour to Viking". The tour will include visits to the Viking AI centre in Assentoft Denmark, Cheese factories, Farm shops and Holstein and Jersey herds.

The Aim of the tour is to illustrate to breeders the financial value in using genetics from Viking Genetics. There will, as always be some time for touristic visits to Copenhagen and another European City.

Tentative dates: 17 to 26 August 2019

Costs: To be determined

Please contact your Genimex agent of Chris at the office for more information.



Britt / Simon foto: Britt Stanton (Genimex) Simon Alderson Smith (Genimex) Regitze Larson (Viking Genetics) and Peter Larson (Viking Genetics) checking out a hotel in the beautiful costal town of Mariager in North Jutland to evaluate its suitability to accommodate the 2019 tour group in August.

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Breeding for what truly matters