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MILK & HONEY

EDITION 15 • FEBRUARY 2020

BREEDING A COW THAT LASTS

Joyce Voogt discusses functional survival and BW

STAY ON TRACK

Key reproduction KPI's to monitor throughout the season

DEENSE TOER 2019

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Dinner the first night of the study tour to Denmark was throughly enjoyed by all at the Flamen restuarant in Randers

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GENIMEX OFFICE
Tel: 012 666 7342
Fax: 0866 363 199
Email: info@genimex.co.za
www.genimex.co.za

Chris Cloete
Tel: 012 666 7342
Cell: 082 807 1433
Email: chris@genimex.co.za

- SALES REPRESENTATIVES -

EASTERN CAPE — **Hendrik Bezuidenhout**
Cell: 083 458 1709
Email: hbez@telkomsa.net

SOUTH & EASTERN CAPE — **Johan Müller**
South & Eastern Cape
Cell: 082 807 1548
Email: muller@capegs.co.za

GAUTENG, SOUTHERN MPUMALANGA, NORTHERN KZN — **Ferdi Myburgh**
Cell: 060 858 2122
Email: ferdi.myburgh.11@gmail.com

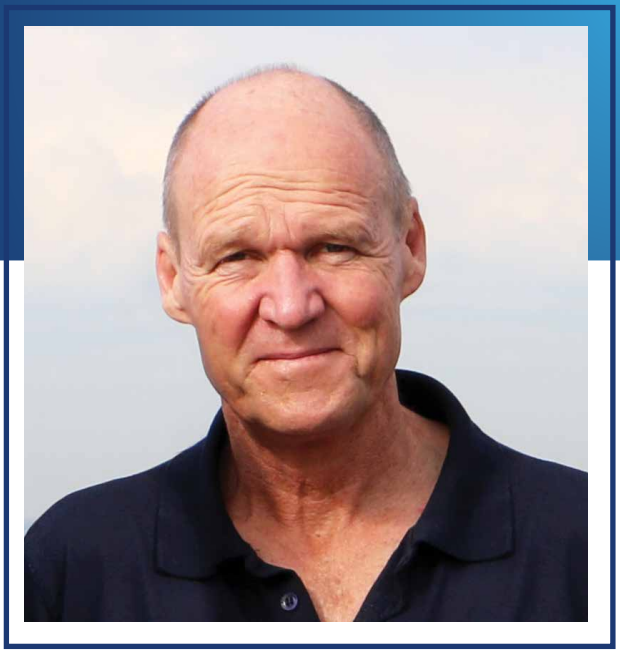
SOUTHERN CAPE — **Willem van Lingen**
Cell: 082 375 1252
Email: willemvanlingen@telkomsa.net

EAST SOUTHERN CAPE — **Shawn Buckley**
Cell: 082 828 8481
Email: ebuckley@telkomsa.net

KZN MIDLANDS — **Britt Stanton**
Cell: 082 575 9387
Email: britt@genimex.co.za

MPUMALANGA, GAUTENG AND EXPORTS — **Simon Alderson-Smith**
Cell: 083 379 4656
Email: simon@genimex.co.za

EAST LONDON — **Dave Swift**
Cell: 083 440 7291
Email: swiftfamily@discoverymail.co.za



Foreword

By Chris Cloete

As we approach the end of January 2020 I must acknowledge that I have had some fun as well as some challenges putting together this the 15th edition of Milk and Honey.

As a scientist and not being a journalist, which I am very far from, putting something like this together is not possible without the help and inputs from a team of people. I like to base the Milk and Honey on science and fact. As I clearly said in the Foreword of Milk and Honey 14, let's cut the warm and fuzzy stuff in cattle breeding and concentrate on the things that can make you our very valued clients more money. Breeding Fertile, Healthy and Profitable cows.

Allow me a moment to acknowledge the team of people who's contribution have made this publication possible. Our regular contributors, in no order of importance.

Dr Joyce Voogt of Livestock Improvement Corporation New Zealand LIC.

Claus Langhahl of VikingGenetics.

Johan Muller of Genimex.

A new contributor, but not a new face to many of you in the industry is Dr Johan Jooste. Thank you Johan and I look forward to your contributions in the future.

As we have access to articles published by Dairy NZ a very large thank you to them for allowing us access to their publications and articles.

What would the Milk and Honey be without photographs? Here I would like to express my thanks to Willem van Lingen of Genimex for the effort he puts in to sending me the photographs he took on the Study tour to Denmark.

With my very limited literary skills this publication would be a disaster if it were not for the assistance in corrections and proof reading by Simon Alderson-Smith and Britt Stanton of Genimex.

Doing all the artwork and graphic design and a person that has to put up with all my indecisions and demands is Brenda Ryan. Thank you Brenda for your inputs over the years.

Let's focus on what is in store for us at Genimex over the next few months. The most important task that we are busy with, and will finalize in due course, is selecting the bulls that will make up the Sire Teams that we will be offering the industry this year.

Between Viking and LIC teams the process is similar yet different.

The LIC team will be selected and we will work largely with that team for the year with some minor changes as bulls may die or be culled.

The Viking team will change throughout the year, this is due to the fact that we are operating in the Genomic era where the bulls will change as new and better ones become available and surpass the older ones. But we still advocate the use of a team of sires, the team may just change more regularly than that from LIC.

At this point I would like to stress the fact that all the selections will be based on science and financially important traits. Forget those traits that make people feel good and form part of a hobby. We will concentrate on traits that will make you more money.

On page 24 of this edition of Milk and Honey I have set out the weights of the traits that are incorporated in the two main overall selection indexes of our supplier VikingGenetics and LIC. These indexes are based on financially important traits and are an indication of the Euro or $ value of the bull.

Many of you will recall the workshops we held in 2017 which we called Dairy 2020. We have decided to hold another series of these workshops this year. A different set of speakers have been invited to present papers. We will be looking at factors like management of large corporate type farms, climate change, drought etc.

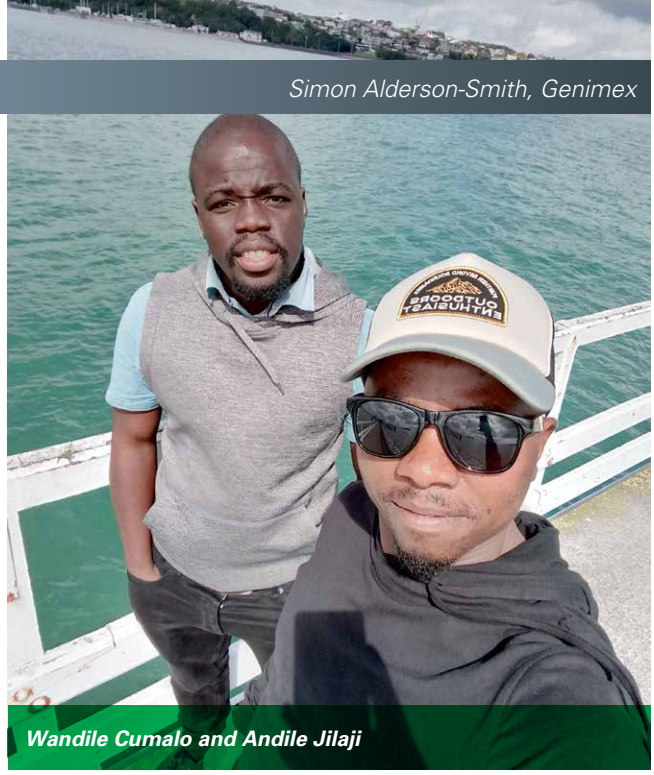
These workshops promise to be very interesting and will be of great value to any serious dairy farmer in SA. Just another way for Genimex to give something back to the industry. See back cover of this edition of Milk and Honey for some details. Your personal invitation will be handed to you by your Genimex agent or sent to you via ACS. We look forward to your attendance at one of these days as they, as with our Sire selection, will focus on making you more money.

Let me end off here and wish you all the very best for the year. I hope that you enjoy reading this edition of Milk and Honey and that you can find something of value in it.

Chris Cloete

Simon Alderson-Smith, Genimex

Amadlelo Managers in New Zealand



Wandile Cumalo and Andile Jilaji

Wandile Cumalo and Andile Jilaji are currently halfway through a one year training internship in New Zealand on a program supported by LIC New Zealand, Amadlelo and Genimex. Wandile, an employee of the Cairnbrogie Estates in the Western Cape is currently working for ITR AG LTD owned by Murray and Marcelle Douglas in the Northland of New Zealand. Andile, an employee of the Amadlelo Dairy Project at their Middledrift Dairy, is currently working for Scott and Lee Taylor, also on the Northland of New Zealand.

Genimex recently caught up with Wandile and Andile and got the following feedback:

FARM INFO:

Wandile: 683 milking crossbred cows on 589 Ha farm comprising 300 Ha of Rye and Clover Grass pasture and the rest Pine Forest. Autumn and Spring calving seasons. Their breeding strategy is to focus on milk solids as price is based on milk quality.

Andile: SF and LK Taylor Partnership. 213 Ha farm with 40 Ha runoff milking 400, predominantly Holstein-Friesian cows, and 100 replacement heifers. Pastures are 50% Kikuyu and 50% Rye Grass and Clover mix. They have a split Autumn and Spring calving season. The contours of the farm are a mix of flat, medium and steep. Very wet winters with lots of rain and dry summer. Standoff areas are very important. Special attention is paid to production before Christmas as its key before the pastures dry out. Mulching and drilling Annuals is very important as they provide good amounts of forage.

FIRST IMPRESSION WHEN ARRIVING IN NEW ZEALAND:

Wandile: My first impression was when I arrived, I found the people to be welcoming and very friendly. Once on the farm I was impressed by how everything was so green and that the farm is run by so few people.

Andile: The green pastures when coming into land. I believed that most people in New Zealand are farmers because the only areas with no pastures was on extreme slopes. The people are very friendly and caring.

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

Wandile: What surprised me the most was the level of technology used in dairy farming this side to get most things done in time and efficiently. The minimal use of drugs given to cows is also really positive and impressive. A big lesson is realising that you need to be an all-round person on the farm, doing everything from cowboy work, milk harvesting, pasture management and irrigation. Doing the right thing first time is key to successfully accomplishing the duties given.

Andile: I was surprised how some pastures were planted on steep hills and I was curious to find out how they managed to work some of the paddocks. I was also impressed by the use of technology to reduce the work load for various tasks. My biggest lesson so far is that dairying isn't just about milking cows, it's about providing them with enough feed to meet their nutritional requirements on a daily basis. Some of these lessons will definitely be of use to my colleagues in South Africa.

WHAT ADDITIONAL ACTIVITIES HAVE YOU BEEN EXPOSED TO?:

Wandile: Two things really stand out and that would be running the shed unsupervised and attending multiple discussion groups.

Andile: I have been involved in local DairyNZ discussion groups where I get to meet and interact with local dairy farmers. We also got a helicopter flight around the farm to inspect the property and I really enjoyed the experience.

ADVICE TO THE NEXT ROUND OF INTERNS:

Wandile: Be willing to learn everything. Be prepared to work unsupervised and get the job done in time. Ask questions. Rest enough since its physical work.

Andile: They should take the internship seriously, be ready to work hard and be willing to learn.

Genimex wishes Wandile and Andile all the best for the second half of their internship and we look forward to welcoming them back home where they will share their experiences with their colleagues.

Joyce Voogt, BVSc. LIC International Technical Manager

Breeding a cow that lasts - Functional Survival and BW

Cow longevity is desirable for both the cow and the farmer. The link is drawn between cow health, happiness and longevity in industry technical websites (AHDB, 2019).

Additionally for the farmer, longevity is a significant contributor to farm profitability since it reduces the overall need for and cost of replacements. It allows the cow to achieve a maximum period of profitability after her own initial costs of breeding and rearing have been recovered (Miglior, 2017).

A cow's life expectancy in the herd can be significantly impacted by her fertility and productive performance, but there are also other factors impacting her survival which should be accounted for in animal breeding.

New Zealand's Breeding Worth (BW) genetic trait for functional survival considers the cow's additive genetic ability to remain in the herd independent of her fertility and production. The trait is complex because many factors are considered in the retention of a cow and also because of challenges in estimation due to poor recording of 'reasons for removal' in the national dairy industry database (Stachowicz, 2017).

WHAT IS RESIDUAL SURVIVAL?

Residual survival is the current functional survival trait measured in New Zealand's Breeding Worth index. Derived from Total Longevity, it represents the genetic merit for survival in herd beyond that accounted for by other traits in the index such as production and fertility, thereby avoiding double counting.

Residual Survival = Total longevity - Longevity explained elsewhere in BW

It takes into account known genetic relationships between survival and all other traits in BW, with periodic adjustments for changes in genetic relationships over time.

WHAT IS TOTAL LONGEVITY?

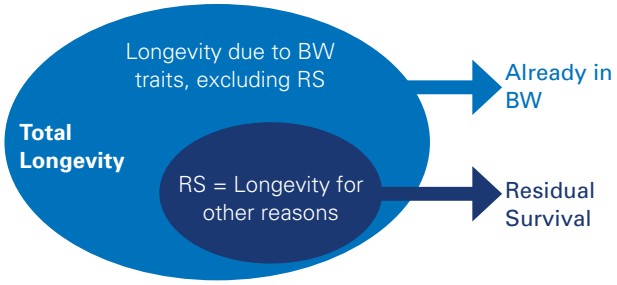
Total longevity looks at the direct survival in the herd of a cow from her first to each following lactation up to her fifth (i.e. SV12, SV13, SV14, SV15). In New Zealand it measures the days from her first calving to the date of her last herd test.

It uses, as predictors, some early life traits for production, body condition, fertility, health and TOP (Traits Other than Production).

Total longevity = Herd life associated with direct BW traits + Herd life associated with traits not directly in BW

The TOP traits included are owner opinion, milking speed, leg conformation, dairy conformation and udder overall in lactation 1, as these are the TOP traits most strongly correlated with the likelihood of survival.

The influence of traits varies depending on the age of the cow. Body condition score and milking speed are more strongly associated with early life survival, while udder and legs traits have more association with later life survival (NZAEL, 2019; Berry, 2005; Stachowicz, 2017).



Direct longevity has a relatively low heritability at 0.055 effectively, meaning genetics contribute only a little to the actual phenotypic cow survival. However, there is wide genetic variation within the population meaning it can still be selected for.

The average Total Longevity BV for cows in 2019 is 134 days. This means they have longer herd life than the 2005 born genetic base cow. The standard deviation is 145 days, giving real opportunity to improve genetic longevity.

WHAT ARE THE TRENDS FOR SURVIVAL?

Genetic trends for longevity in NZ remain positive for all breeds, averaging 14.7 days per year of extra herd life for cows (DairyNZ,2019).

Recent research has shown that New Zealand has had no increase in mortality risk over the last 20 years. This contrasts to international trends of increased mortality in modern dairying countries.

Actual herd life for New Zealand cows increased by 6 days per year between 1990 and 2003 (Compton, 2018).

Stay on track

To help your herd stay on track for a successful mating, the LIC team lists some reproduction KPI's to monitor throughout the season, along with references to relevant sections of DairyNZ's InCalf® book for New Zealand dairy farmers. (The InCalf book is downloaded at www.dairynz.co.nz)

PRE-CALVING

Who/when/what	Target	Trigger point	Action	InCalf book
2 year old liveweight at 22 months old	90% of mature liveweight	Less than 85%	Preferentially manage those that are below target before and after calving to allow them to milk well and get back in-calf quickly at mating time	Chapter 9
2 & 3 year olds - 2 months out from calving	BCS 5.5	Less than BCS 5	Preferentially feed those less than BCS 5 (NZ) to get them up to BCS 5.5 before they are one month out from calving (cows don't tend to gain BCS in the last month before calving)	Page 77, 80, 81
2 & 3 year olds - 1 month out from calving	BCS 5.5	Less than BCS 5.5	Young cows (first and second calvers) that are below BCS 5.5 one month out from calving will need a strategy in place to help them preserve BCS/cycle quickly after calving, e.g. put them on OAD, or put them in a separate herd to the older cows	Page 77, 80, 81
Mature cow BCS - 2 months out from calving	BCS 5	Less than BCS 4.5	Preferentially feed those below BCS 4.5 two months out from calving to get them up to BCS 5 before they are one month out from calving (cows don't tend to gain BCS in the last month before calving)	Page 77, 80, 81
Mature cow BCS - 1 month out from calving	BCS 5	Less than BCS 5	Mature cows (4 years and older) that are below BCS 5 one month out from calving, will need a strategy in place to help them preserve BCS/cycle quickly after calving	Page 77, 80, 81

CALVING

Who/when/what	Target	Trigger point	Action	InCalf book
Percent of the herd calved by week 6 of calving	87%	Less than 84%	Put together a plan for how you are going to deal with all late calving cows to help them cycle and get back in-calf early, e.g. OAD, hormonal intervention	Page 65
BCS loss between calving and mating/joining	Lose less than 1 BCS	More than 1 BCS already lost	Preferentially feed them, or put them on OAD at least a month before joining/mating start	Page 83
Cow health issues between calving and mating end date	Less than 5% of the herd affected per disease	Incidence above 4%	Re-assess cow health management practices and talk to your vet about prevention strategies	Chapter 12

PRE-MATING

Who/when/what	Target	Trigger point	Action	InCalf book
Heifer liveweight 1 month ahead of joining/mating	60% of mature liveweight at 15 months old	Below 55% of mature liveweight	Preferentially feed heifers that are below target liveweight. Check heifers have received all animal health treatments required	Page 55- 56
Premating heats – 10 days out from MSD	75%	65%	Consult your vet about an anoestrous cow management plan	Page 109 & chapter 17
Premating heats – at MSD	85%	75%	Consult your vet about an anoestrous cow management plan	Page 109 & chapter 17
Herd BCS – 2 weeks before MSD/ joining start date	75% of the herd at/above NZ BCS 4	Less than 75% are at BCS 4/4+	If possible, preferentially feed/supplement cows below BCS 4	Page 77

MATING

Who/when/what	Target	Trigger point	Action	InCalf book
Early heat detection monitoring	Less than 10%	More than 8%	Monitor returns in the first 17 days of mating. If you have more than 8% repeat matings in the first 17 days, it is likely that you have too many cows that are not on heat are being mated. Review heat detection practices/policies, e.g. are cows being identified correctly? Are there a lot of 1 day returns happening?	Page 107-108
Herd 3 week submission rate	90% submitted	Less than 81%	Monitor herd submission rate daily. If less than 4% of the herd (on average) is being submitted daily, review heat detection practices (are heats being missed) and seek advice. 30% of the herd should be mated by week 1, 60% by week 2 and 90% by the end of week 3 of joining/mating	Page 28 & 88
Milksolids yield on milk dockets – herd energy intake	Yield drops by ≤0.07 - 0.1 kgMS/cow/day over 2-4 days	Yield drops by more than 0.1 kgMS/cow/day over 2-4 days	Milksolids yield is usually linked to energy intake, and energy intake impacts reproductive performance. If milksolids yield drops consistently over 2-4 days, review herd feed quality and quantity. Additional nutritional checks to monitor energy status can be carried out.	Page 88
Submission rate of early calved mature cows (ECMC)	95%	Less than 90%	Monitor submission rate of the cows who are 4 years or older and calved in the first month of calving .If the ECMC 3 week submission rate falls below 90%, either heats are being missed, or there is another problem in the herd. Review heat detection practices (are heats being missed) and seek advice	Page 105

Useful terms: 2 year olds = R2's/first calvers, 3 year olds = R3's/second calvers, Mature cows = cows 4 years and older, MSD = mating start date (M&H)

Peter Wichman

Dale and Colin Armer

Peter Wichman

Herewith some of the point notes on the farm where Peter and Michelle Wichman are contract milkers for Colin and Dale Armer.

Peter has agreed to come over to South Africa as a speaker at the next round of Dairy 2020 workshops planned for April 2020. Peter is a hands on manager that sets things in place and makes it work.

See the back cover for more details on the planned workshops.

NOTES OF KAKAHO DAIRIES FARM SYSTEM

- Peter & Michelle Wichman, contract milkers since 2008
- 4 People work farm
- Effective area = 383 hectares
- Elevation above sea level 550-600 meters
- 3 Houses, 54 bail rotary dairy, large covered calf shed
- 1160 Cows milked in peak season
- 25% Heifer calves reared plus 3% bulls leaving the farm at 90kgs
- Calves reared on colostrum & whole milk, OAD, no calf meal fed
- Cows all wintered on farm using winter crop and top end of feed wedge
- Incalf heifers return to farm 30th June @ approx 430kgs
- Cows start calving 24/7 heifers 18/7
- Mating is 5 weeks AI % 5 weeks bulls (3 bulls/100 cows)
- No vet intervention at mating
- 12.1% Mt same AFL company average
- Fert applied by air
- N P K S Mg
  105 40 150 75 20
- Nitrogen loss to water last season 54kgs
- Looking to reduce applied N to 75kgs/ha

GRAZING MANAGEMENT & TARGETS

- Average Pasture Cover (APC) June 1st = 2300 (critical)
- Winter grass rotation 175 days plus Swedes
- Via on off grazing 5 kgs crop & 3-5 grass depending on growth APC
- Start calving 2300 plus APC
- Spring Rotation Planner is followed in detail via square meters / cow allocation
- Target APC 15 September @ 1900 and rotations 28 days
- Generally no pasture surpluses appear till early to mid November
- All surpluses are progressively dropped out for deferred grazing
- No silage is made on dairy farm
- No summer crops sown
- Rotation lengths are out to 35 days by Xmas
- Deferred grazing strip grazed off like a crop from late January to mid March
- Mid to late summer rotations typically 40 days
- Round length targets out 80 by early May then doubled with crop feeding May 31
- All Culls removed by 28 February
- Progressive autumn dry off depending on cow condition
- Cows to average 4.8 condition score with minimum 4.5 by 31 May
- Very little room for weight gain over winter
- Almost no machinery on farm (M&H)

Deense Toer 2019

Genimex het in Augustus 2019 'n groep van 14 suiwelboere op 'n studietoer na Denemarke geneem. Twee Holsteinkuddes en 8 Jerseykuddes is besoek. Daar was ook besoeke aan die hoofkantoor van VikingGenetics en die Thise Kaasfabriek. Die toer was 'n reuse sukses en ons is oortuig daarvan dat hierdie groep suiwelboere uiters waardevolle inligting bekom het en dit terselfdertyd geweldig geniet het. Hier is van die hoogtepunte:

Op Sondag 18 Augustus 2019, land die groep in Kopenhagen en vertrek vandaar op 'n veerboot na die eiland Fyn. Van die studente stad Aarhus, vertrek hulle na Randers. Op die 2 de dag word VikingGenetics besoek en verskeie van die huidige genomiese bulle sowel as van die ouer beproefde bulle word vertoon. Die Holstein bul, VH Brook en die Jersey bul, VJ Gislev trek veral baie aandag. Die res van die besoek word gewy aan lesings deur Peter Larson, hoofbestuurder van die Jerseyras asook Claus Langdahl van die Holstein afdeling.

Peter Larson heet almal welkom voor die kantore van VikingGenetics

VH Brook word vertoon

JERSEYS

Die kudde van Bent en Lars Olesen was ons eerste plaasbesoek. Bent is die voorsitter van die Deense Jersey Raad en bestuur hierdie kudde van 450 koeie in melk. Hul produksie rekord is as volg:

7919 kg melk 6.24% Bottervet (494 kg) 4.22% Proteïen (334 kg)

Bent Olesen by een van sy VJ Husky dogter met die uitstekende rekord van: 9856 kg melk 6.11 % Bottervet (602kg) 4.22% Proteïen (416kg)

Die kudde van Svend Otto Sogaard en sy seun Thomas was 'n ook 'n groot hoogtepunt. Hulle produseer organiese melk vir die Thise kaasfabriek waar ons ook later besoek afgelê het. Groot sterk koeie met besonderse kapasiteit, is 'n duidelike kenmerk van die kudde. Thomas se liefde vir wat hy doen was duidelik en hy het 'n groot groep koeie spesiaal voorberei om aan die Suid Afrikaners te wys. Ons het pragtige dogters van die bul VJ Gislev (die vaar van VJ Garant) gesien. Hy is 'n beproefde bul wat nie in Suid Afrika gebruik is nie en beïndruk veral met die uitstekende produksie van sy 778 dogters in melk. Sy proteïen indeks van 119 is een van die redes waarom daar reeds semen van die bul bestel is. 'n Groep VJ Livius dogters met uitstekende produksies en agteruierhoogte was volgende. VJ Livius is 'n beproefde seun van die bekende bul VJ link. Die lanklewendheid van baie van die koeie was opvallend sowel as verbasend hoë produksies, ten spyte van die beperkings wat die organiese voedingsstelsel daarstel.

Die jaarlikse produksie van die 500 koei – kudde is as volg:

7707 kg melk 5.7% Bottervet (439 kg) 3.96% Proteïen (305 kg)

'n VJ Tester dogter met besonderse uier by Peter Hoj

Die toergroep by van die ouer koeie van Svend Otto Sogaard

Die Adelgaard kudde van Vagn Lindy Petersen was volgende aan die beurt. Die Deense Jerseyboere se teeldoelstellings is gefokus op die Nordic Total Merit Indeks (NTM). Vagn en sy seun Christian melk ongeveer 300 Jerseys en het reeds verskeie top koeie met hoë NTM indekse geteël. Verskeie bulle is al aan Viking Genetics gelewer. Hulle is die trotse telers van onder andere die bul VJ Hiwe. Hy is 'n VJ Hihl seun uit 'n VJ Hulk koei met die fantastiese beste laktasie van meer as 12000 kg met 'n 6.88% Bottervet en 4.49% Proteïen! Haar leeftyds produksie is meer as 51000 kg met 'n 7.18% Bottervet en 4.61% Proteïen. VJ Hiwe is 'n beproefde bul. Hy het 500 dogters en spog met 'n proteïen indeks van 116 en bottervet indeks van 119.

Koek en tee by Vagn Linde Petersen

Die Haugstedgaard kudde van Peter Hoj sal lank in ons gedagtes wees. Hierdie kudde word uitstekend bestuur en is waarskynlik een van die hoogste produseerders van volume vastestowwe ter wêreld! Peter melk 150 Jerseys met die volgende rekords:

8294 kg melk 6.09 % Bottervet (505kg) 4.24% Proteïen (352kg)

Ons het hier van die eerste VJ Hitmans in die melk gesien en hulle het veral beindruk met pragtige hoë agteruiers en baie goeie uierdiepte. VJ Hitman het meer as 500 dogters en is swaar gebruik in Suid Afrika. Hy het 'n proteïen indeks van 115 en uierontleding van 126.

Die VJ Haleys was net so indrukwekkend. Sy vooruieraanhegting van 133 maak hom nog steeds 'n baie gewilde bul. Hy is beproef en het meer as 1200 dogter.

Peter Hoj, eienaar van die Haugsteedgaard kudde

Die Hitman en Haley dogters by Peter Hoj

HOLSTEINS

Ons het die voorreg gehad om een van die hoogste produksie Holstein kuddes in Denemarke te besoek. Bjarne Hansen melk 200 Holstein koeie met die volgende fantastiese rekord:

15 560 kg melk 3,55 % Bottervet (552kg) 3.38% Proteïen (526kg)

Dit is meer as 1000 kg bottervet en proteïen per koei! Daarby is 'n gemiddelde somatiese seltelling van 250 000 nie sleg nie. Ons het hier 'n paar uitstekende VH Bernells in die melk gesien. Bernell is 'n Bube seun en is beproef. Hy het 'n NTM van 33 en gesels dus saam met die beste genomiese bulle. 'n Produksie indeks van 121 en 'n proteïen indeks van 125 word ondersteun met baie goeie tipe en gesondheidseienskappe.

Bernell dogter in Bjarne Hansen se kudde

Ons weet dat hoë produksies nie al is wat belangrik is in 'n volvoer - sisteem nie, maar die produksies in die kudde is so fenominaal dat dit belangrik is om te weet wat bereik kan word met die regte genetika en voeding. Onderaan hierdie bladsy is 'n paar van sy top koeie se produksies.

By die kudde van Hans Skovgaard het ons nog indrukwekkende Bernell dogters gesien en die groep kon sien hoe "hoof trimming" in Denemarke gedoen word. Die NTM sisteem sit geweldig baie klem op algemene gesondheid en hoefgesondheid. Dit kry veral by die Holsteins, geweldig baie aandag. Kontrakteurs word gebruik om behandelings te doen sowel as om die data te versamel. Nege verskillende siekte toestande by hoewe word geïdentifiseer en elke kontrakteur is verantwoordelik om die data van elke koei op te laai.

Hierdie was net 'n paar van die vele hoogtepunte. Daar was genoeg tyd om ook aan die toerisme deel aandag te gee. Die groep het nie net baie geleer nie maar ook baie inligting bekom. Genimex wil aan elkeen wat die geld en tyd afgestaan het om ons te vergesel, baie dankie sê, dit was 'n voorreg om julle saam te neem. (Julle was boonop ook 'n plesier om mee saam te toer). Groot dank ook aan Viking Genetics se personeel wat weereens op hul eerlike en nederige styl, vir ons 'n foutlose toer ge-organiseer het!

Die gevoel van die toergroep word so goed opgesom met die kommentaar van Jonathan Barry, suiwelboer van die Swellendam - Suurbraak area. M&H

Koei nommer	Vaar	Moeder Vaar	Kg Melk	Bottervet %	Proteïen %	Kg BV + Prot
2489	VH Bismark	D Onside	22 885	3.11	3.12	1426
3276	VH Perkins	VH Salamon	19 999	2.98	3.16	1229
3158	VH Marco	VH Loop	19703	3.45	3.25	1320
3100	VH Barkley	D Orange	19119	3.36	3.43	1299
2955	VH Raven	D Etoto	19080	3.68	3.63	1396
3256	VH Bernell	VH Mandel	18762	3.73	3.26	1312
2936	VH Raven	D Orange	18399	3.14	3.08	1144
2400	D Jul	D Sammy	16241	3.88	3.73	1237
2878	VH Mandel	D Sammy	16562	4.21	3.45	1269

Regitze Larson (VikingGenetics), Peter Larson (VikingGenetics), Chris Cloete (Genimex) and Jonathan Barry

"I have been very fortunate to attend many courses, conferences, farm tours and visits. This is the first time that all of my questions were answered. In an ever changing world, where the end user demands that not only the milk produced, but the quality of the cow herself and the way we treat illness will have to become a top priority. Practices like traceability and heavy monitoring of antibiotics will become the norm. Therefore focusing on the health traits when it comes to our breeding plans is essential. The Genetics from Viking is doing just that for us.."

Jonathan Barry

Claus Langdahl, Breeding Manager VikingHolstein, VikingGenetics

What is the optimal size for a Holstein Cow?

VIKINGGENETICS
Breeding for what truly matters

There are definitely many opinions about the optimal size of the cow.

At VikingGenetics, our focus in the VikingHolstein breeding programme is that the cow should not become any taller. The optimal size as stated in the breeding goal is 148 cm and the breed average is 148.6 cm at the moment for first calvers.

Table 1 shows the seven traits included in stature, their economic optimum and the breed average. All figures, except size, are shown on the scale used when classifying the cows. Scale from 1-9. The table clearly shows that the VikingHolstein cow on average today, is close to the economic optimum – what we indicate as a medium-sized cow.

Table 1. Economic optimum and breed average for traits included in the stature index

Trait	Economic optimum	Breed average = index 100
Size, cm	148	148.6
Body depth	6.0	6.1
Chest width	5.0	5.2
Angularity	6.0	5.4
Topline	7.0	6.6
Rump width	5.5	5.4
Rump angle	5.0	4.8

THE MEDIUM-SIZED COW IS THE MOST ECONOMICAL

She has a longer productive lifetime, less disease cases, such as hoof problems and need less feed to maintain. Table 2 shows the genetic correlations that confirm this.

Table 2. Genetic correlations between stature and other traits. Source: SEGES Denmark

Trait	Correlation to stature
Yield	+18
Female fertility	-14
Udder health	-16
Hoof health	-20
Longevity	-35

It is true that there is positive correlation between a large cow and yield, but it is also a fact that the medium-sized cow that is the most economical – lower costs and longer lifetime and overall a more efficient cow. This is the reason why we do not breed her larger at present.

HEIGHT INFLUENCES LIFETIME PRODUCTION

Table 3. Effect of height on lifetime production measured in kg fat+protein, expressed as deviation from herd average.

	1	2	3	4	5	6	7	8 (>155 cm)	9
Share of cows	2%	7%	13%	36%	20%	16%	4%	1%	-
Kg fat + prot	-31	+2	+32	+30	-5	-43	-99	-193	-

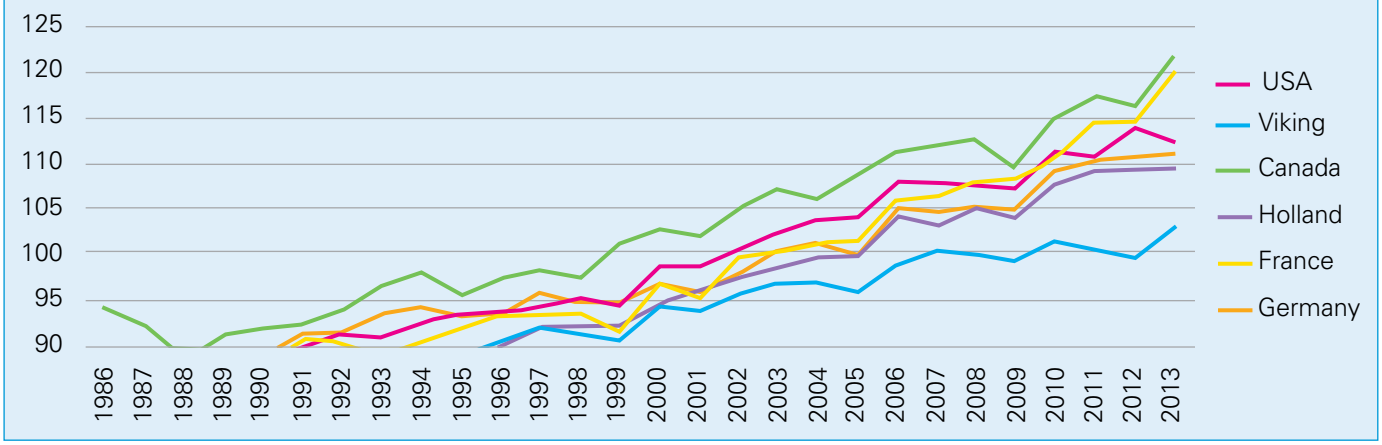
Cows taller than 155 cm produce significantly less solids (-193 kg) than cows of classification optimum height (148-150 cm). On the other hand, very small cows (135-140 cm) have lower lifetime production (-31 kg) compared to cows of classification optimum.

VIKINGHOLSTEIN COMPARED TO OTHER HOLSTEIN

The size of the VikingHolstein cow compared with the Holstein cow in other countries has been evaluated and a comparison of the major Holstein populations in the world with Holstein cow sizes and development of this produced. This includes all daughter proven bulls in the countries and data from almost 80,000 bulls. The conclusion is crystal clear.

Figure 1 shows the figures from 2001 to 2013, which is the year being progeny proven now. The figure clearly shows that the VikingHolstein cow today is smaller than Holstein cows in other countries. She has grown over the years, but not since bulls born in 2007. That is very satisfactory and shows that VikingHolstein, despite the influence from foreign sires, has managed to keep the medium-sized cow, the opposite of cows in North America in particular.

Figure 1. Development in size for Holstein cows in major Holstein populations based on bull birth years from 2001 to 2013. Index 100 = 148.6 cm.



NZ Dairy Stats Highlights – great news all round in 2018/19!

Phenotypic trends reflect the underlying positive genetic gains once again.

OVERVIEW

2.4% **21.2 BILLION LITRES OF MILK**
containing 1.88 kilograms of milksolids
(2.4% up from 2017/18)

0.9% **4.946 MILLION COWS**
(0.9% down from 2017/18)

Production is up despite cow numbers being 0.9% down and effective milking hectares down 0.65.

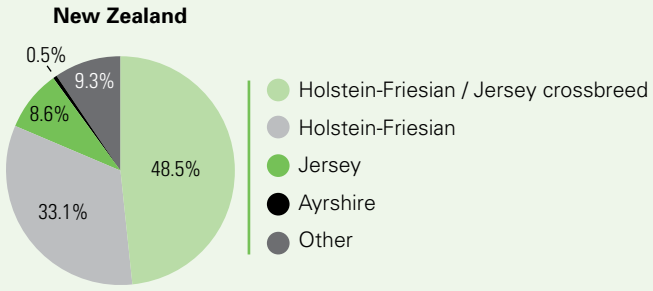
1% **3.59 MILLION COWS MATED TO AB**
(1% up from 2017/18)

1.6% **3.67 MILLION COWS HERD TESTED**
(1.6% up from 2017/18)

Herd improvement focus continues to grow:
73% of milking cows are now mated to AI
74% of cows are now milk recorded

BREEDING A QUALITY HERD REMAINS A PRIORITY FOR FARMERS

Breed category precentages of cows for New Zealand in 2018/19



REPRODUCTION & SURVIVAL - POSITIVE PHENOTYPIC TRENDS CONTINUE

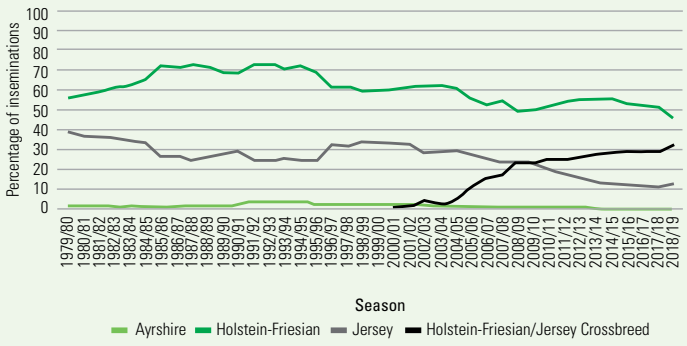
6 week in-calf rate – up 1.4% to 67.5% (det FFR)
3 week submission rate – up 2.1% to 80.7% (det FFR
Conception rate for all AI insems – up 0.1% to 54.1%

Calving interval is 368.6 days, 2.3 days shorter

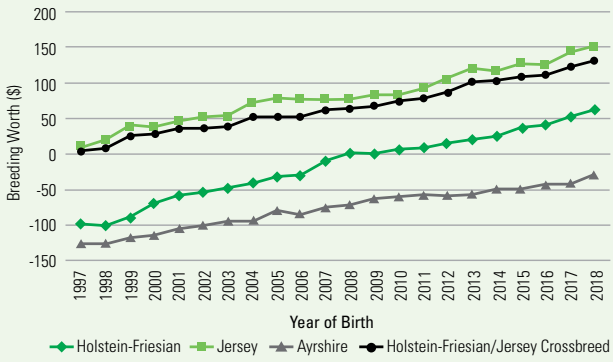
% of herds with early aged pregnancy testing information increased 2.3% with 52% of herds in MINDA now generating a detailed fertility report. That's >4000 herds!

Survival between lactations increased in most age groups with 2-3 years (86.3%), followed by animals aged 3-4 years (85.5%) and 4-5 years (85.0%)

Trend in the percentage of inseminations of each breed category for the last 40 season



Trend in Production Worth for all cows



Joyce Voogt, BVSc. LIC International Technical Manager

The History of Trait Selection

Genetic selection for traits of interest in dairy cattle has resulted in spectacular production gains over the last 100 years, with the modern cow capable of producing more than five times that of her ancestors in the 19th Century! Let's uncover a few insights from an excellent review of how this came about, published by Miglior et al.[1].

Animal evaluation and breeding is continually evolving. Looking at that history helps explain some different approaches to assessing cows that we still see today.

It began in earnest in the early 20th century with the systematic collection of trait information. This allowed animals to be ranked against a common breeding goal – initially this goal was for improved milk yield and fat production. In North America, the County Fair cattle showing circuit also promoted breeding for conformation traits.

Over time, science:

- delivered advances in statistical methods for animal evaluation,
- provided technology for better and wider measurement of milk components and additional traits such as somatic cell count, and
- improved the understanding of genetic relationships between traits.

CONFLICT AND BALANCE:

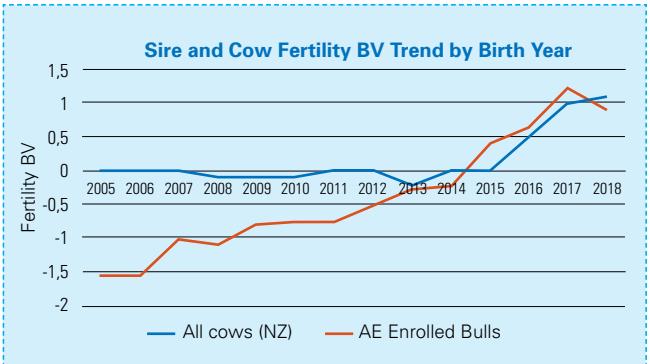
Breeding goals in North America in the early 20th century focussed mainly on increasing production, with conformation gaining traction in the mid-part of the century.

AI technology created division among producers in North America and elsewhere as differing farmer goals emerged – 'production and workability' versus 'type'.

Extensive research in the early - mid 20th century suggested relatively weak positive relationships between some conformation and production traits.

While the science pointed breeders towards selecting for production and component traits, traits other than production such as conformation continued to feature strongly throughout the 20th century.

Over time it became clear that the large yield gains were coming at the cost of some other important traits; notably body condition, fertility and longevity.



Source: LIC, 2019

By the late 20th century the emphasis had moved away from a predominantly production and type to balanced indexes including functional traits such as fertility, longevity, health and 'workability' traits.

SELECTION INDEX AND TRAITS IN NEW ZEALAND (NZ):

In NZ, the national dairy animal evaluation system uses the Breeding Worth (BW) index. This ranks animals on the predicted efficiency of their progeny to convert feed to farmer profit, in line with the industry's National Breeding Objective.

The breeding story has been different in NZ to elsewhere largely due to the pasture-based, seasonal- calving farm system which dominates the industry. Under this system a tight calving pattern is linked to farm profitability, so good cow fertility is essential and deficiencies in fertility are likely to be rapidly exposed and eliminated.

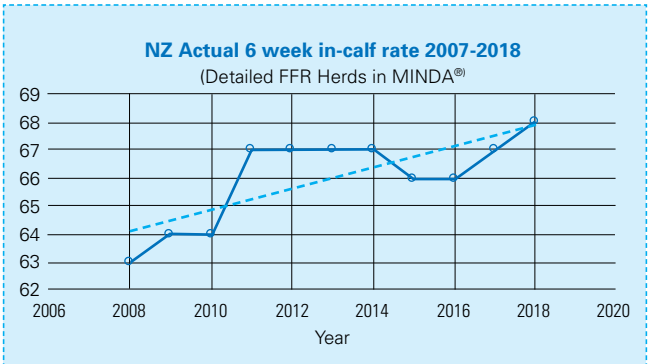
The fertility issues of very high yielding overseas genetic strains introduced in the late 20th Century effectively limited their contribution to the national dairy herd. Female fertility was included in BW in 2002, and both genetic and phenotypic fertility trends in NZ are positive.

TRAITS MEASURED IN NZ:

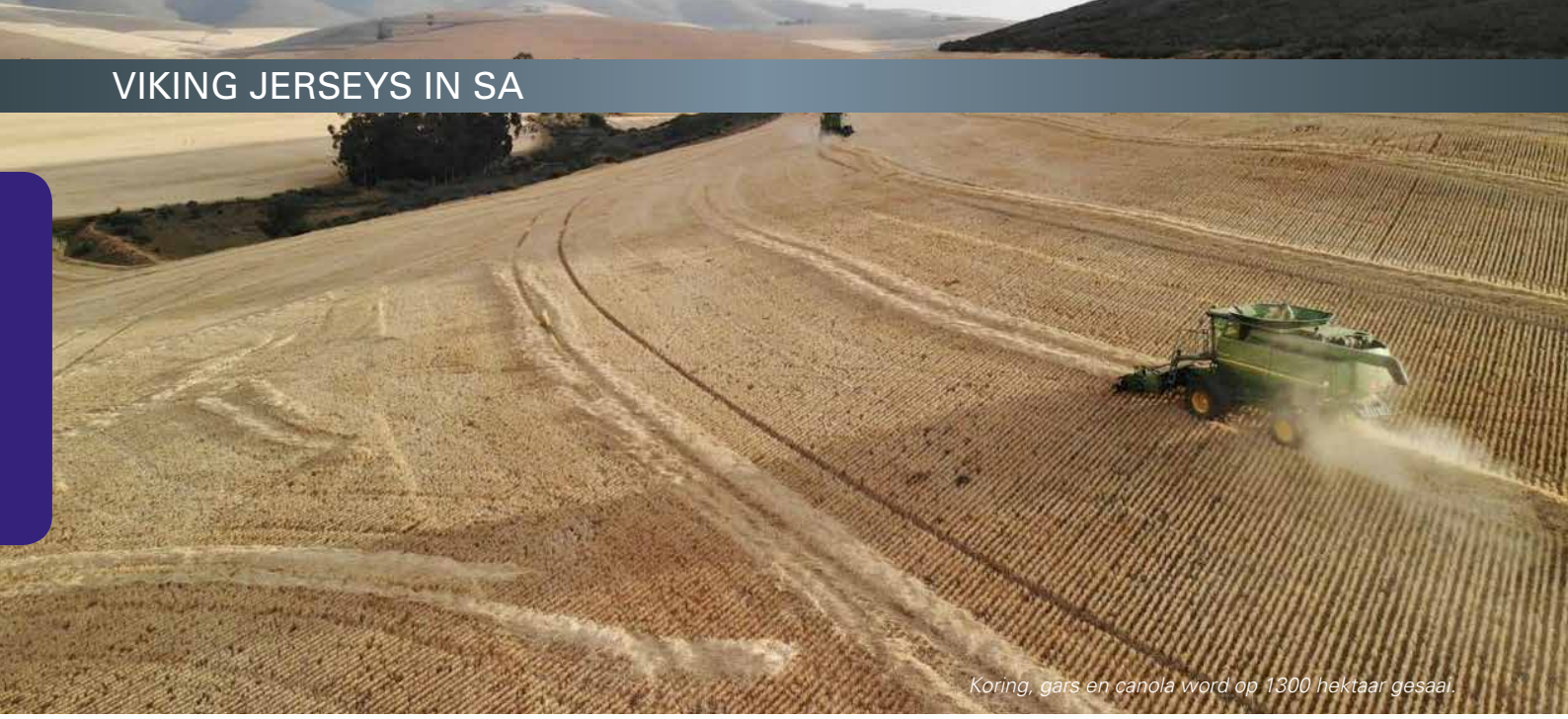
In 2019, traits measured in BW include production traits (fat, protein, volume and live weight) and robustness traits (body condition, female fertility, somatic cell score and residual survival). These are the main traits contributing to farm revenue and costs, so are the traits on which selection decisions are primarily based (DairyNZ, 2019).

In addition animals are scored for traits other than production (TOP), which have value to farmers but do not contribute directly to the BW index. Some of these are used as predictor traits in BW traits because they are positively or negatively correlated with it (e.g. milking speed, dairy conformation, udder overall and owner opinion help predict residual survival). M&H

1. Miglior F, Fleming A, Malchiodi F, Brito L, Martin P, & Baes CF, 2017 'A 100 Year Review: Identification and genetic selection of economically important traits in dairy cattle', J. Dairy Sci. 100, pp 10251-10271



Source: National Dairy Statistics, 2018-19



Koring, gars en canola word op 1300 hektaar gesaai.

Deense Jersey Genetika verantwoordelik vir uitstekende vordering in Suid Kaapse Jerseykudde

VAN NIEKERK BOERDERY - CALEDON

Willie en sy seun, Wimpie van Niekerk van Spes Bona Caledon, is gesamentlik verantwoordelik vir die suiwelvertakking van die familieplaas. Hulle boer saam met Willie se broer, Eben en sy seun Niekie. Die boerdery bestaan hoofsaaklik uit vier vertakkings naamlik, suiwel, graan, skape en vrugte.

Die vrugtevertakkings bestaan hoofsaaklik uit appels en pere. Ongeveer 1300 hektaar koring, canola en gars word gesaai. Eben en Niekie is ook verantwoordelik vir die skaapboerdery van 1600 Dormers en Dohne Merinos.

SUIWEL

Willie het in 1983 met 12 Jerseys en 6 Ayrshire koeie sy suiwelboerdery begin en tans bestaan die kudde uit 660 diere. Hulle melk 380 koeie en geen koeie is aangekoop nie. Aanvanklik is slegs van weidings gemelk maar die afgelope paar jaar word koeie wat die produksie perk haal, op 'n volvoerstelsel gesit en dit verteenwoordig min of meer die koeie wat onder 100 dae in die melk is.

In die tagtigs en vroeë negentigs is slegs plaaslike bulle in sy teelprogram gebruik. Deense Jerseybulle word sedert 1997 gebruik. Die bulle Q Impulse, DJ May, DJ Zuma en DJ Panda het 'n geweldige impak op sy kudde gehad. Hierdie bulle het 'n groot bydrae gelewer wat veral die produksie van vastestowwe aan betref.

Hierdie foto van hul dogters is in 2016 geneem

Hierdie bulle se dogters het ongelooflike produksies en is 'n bewys dat daar met 'n doelgerigte teelbeleid beslis uitstekende vordering gekry kan word. Hier volg van die top produksies:

10 117 kg melk	4,57% bv	3.73% prot	DJ MAY
9350 kg melk	5,15% bv	3,96% prot	DJ PANDA
8829 kg melk	4,92% bv	3,94% prot	DJ MAY
8823 kg melk	4.62% bv	3,53% prot	Q IMPULSE
6780 kg melk	6.51% bv	4,95% prot	DJ MAY
6801 kg melk	6,37% bv	4,83% prot	Q IMPULSE

In 2008 was die kudde se produksies 5650 kg met 'n bottervet van 4,59% en proteïen van 3,75% - totale BV + PROT = 470 KG. Die huidige produksie rekord van die Jerseys is:

370 koeie 6306 kg Melk 5,32% BV 335 kg 4.03% PROT 253 KG

Totaal Bottervet + Proteïen : 588 kg

Gemiddelde somatiese seltelling : 167 000

Hierdie ongelooflike verbetering in produksie kan slegs toegeskryf word aan bestuur, voeding en veral genetika. Die Van Niekerks se teelbeleid is gebasseer op die Deense model, naamlik die "Nordic Total Merit." (NTM) Die model fokus veral op gesondheidseienskappe met uiergesondheid en vrugbaarheid, die belangrikste. Totale produksie dra die grootste gewig en die beleid om die top 10 hoogste NTM bulle te gebruik vereenvoudig hul teelbeleid en dra dus by tot gewaarborgde resultate.

Willie in sy nuwe melkstal wat in 2018 voltooi is

Funksionele bouvorm is baie belangrik en veral uierdiepte en vooruieraanhegting, is 'n vereiste wanneer bulseleksie gedoen word. Die belangrikheid van tipe word egter nie oor beklemtoon nie aangesien betroubare data in die Deense stelsel verseker dat doelwitte sinvol geïnplemeteer word.

Om winsgewend te bly in die suiwelbedryf vereis doelgerigte bestuur en doelwitte. Willie en Wimpie neem jaarliks deel aan die streeks kuddekompetisie wat hoofsaaklik fokus op die algemene voorkoms van die koeie. Die feit dat hulle jaarliks uitstekend presteer is 'n bewys dat indien jou teelbeleid fokus op die ekonomies belangrike eienskappe, jy nie noodwendig hoef tipe in te boet nie.

Van Niekerk Boerdery het dan ook vanjaar die Overberg streek van Jersey SA se kuddekompetisie oorheers met die algehele eerste plek sowel as die beste bulgroep. Sy VJ Husky groep van 10 koeie was die wenner en een van die groep was ook aangewys as die algeheel beste koei.

Die VJ Husky bulgroep wat as wenners aangewys is. Heel links is die algehele wenner

Die Suiwelbestuursspan op Spes Bona met hul bekers na die kuddekompetisie. Agter staan Wimpie van Niekerk, Mynhardt Smit die kuddebestuurder, en Willie van Niekerk

Mynhardt behartig die algemene bestuur van die kudde en het reeds 'n groot bydrae gemaak wat veral ook insluit die kalfgrootmaak afdeling.

Bulle soos Impulse, May, Panda en Zuma, het 'n groot inpak op hul kudde gehad. Hierdie groep Lure's en Husky's is uit hierdie genetika geteel

Ons wens die Van Niekerks alle voorspoed toe in 'n moeilike tydperk waar boerdery en veral suiwelboerdery, vereis dat boere meer vindingryk en doeltreffend moet wees. Genimex wil julle ook hartlik geluk wens en bedank vir jul volgehoue ondersteuning. M&H

VH Balisto Brook - The new number one proven bull is shaking up the rankings in UK

VikingHolstein Balisto Brook is making history in the United Kingdom (UK) ranking number one for the daughter-proven Holstein sires and topping both of the new indexes - autumn and spring calving. "At VikingGenetics we are able to offer farmers the highest reliability with our bulls; what we offer is what we deliver to the farmer. We are really happy that our top selling genomic bull in the UK has become also the number one daughter-proven bull", Sara Wiklert Petersson, Chief Sales Officer from VikingGenetics says.

VH Brook is also moving the foundations of cattle breeding in the UK. "In a brand-new ranking dominated by US genetics, the Danish-bred Viking bull, VH Balisto Brook, rises to the top, graduating from the young sire genomic ranking with early milking daughters", AHDB states in a press release published today saying "Viking incursion breaches US stronghold".

VH Brook's Profitable Lifetime Index (PLI) of £794 is the highest of the available proven bulls and reflects the high fat and protein percentages in his Predicted Transmitting Ability (PTA), at +0.23% and +0.12% respectively. He combines this with breed-leading udder health figures (-40 SCC, -5 Mastitis), reflecting the significant emphasis placed on these traits over many years in the Nordic countries, the communication from the UK Dairy continues.

VH Balisto Brook is also at the top of the Across-breed autumn calving list which is clearly dominated by Holsteins.

"At the top of this ranking is the Danish-bred **VH Balisto Brook**, the bull which also leads the way for Profitable Lifetime Index (£PLI) and features in the top five for Spring Calving Index (£SCI). With an ACI of £668, Brook is the first of 10 Holsteins to take the top 10 places on this across-breed ranking, designed to pinpoint the sires which transmit economic superiority in a typical autumn block-calving, winter-housed, UK situation", the AHDB Dairy informs.

Brook features excellent milk solids and outstanding udder health and has the best TB Advantage prediction in the top five ranked on £ACI (the new Autumn Calving Indexes).

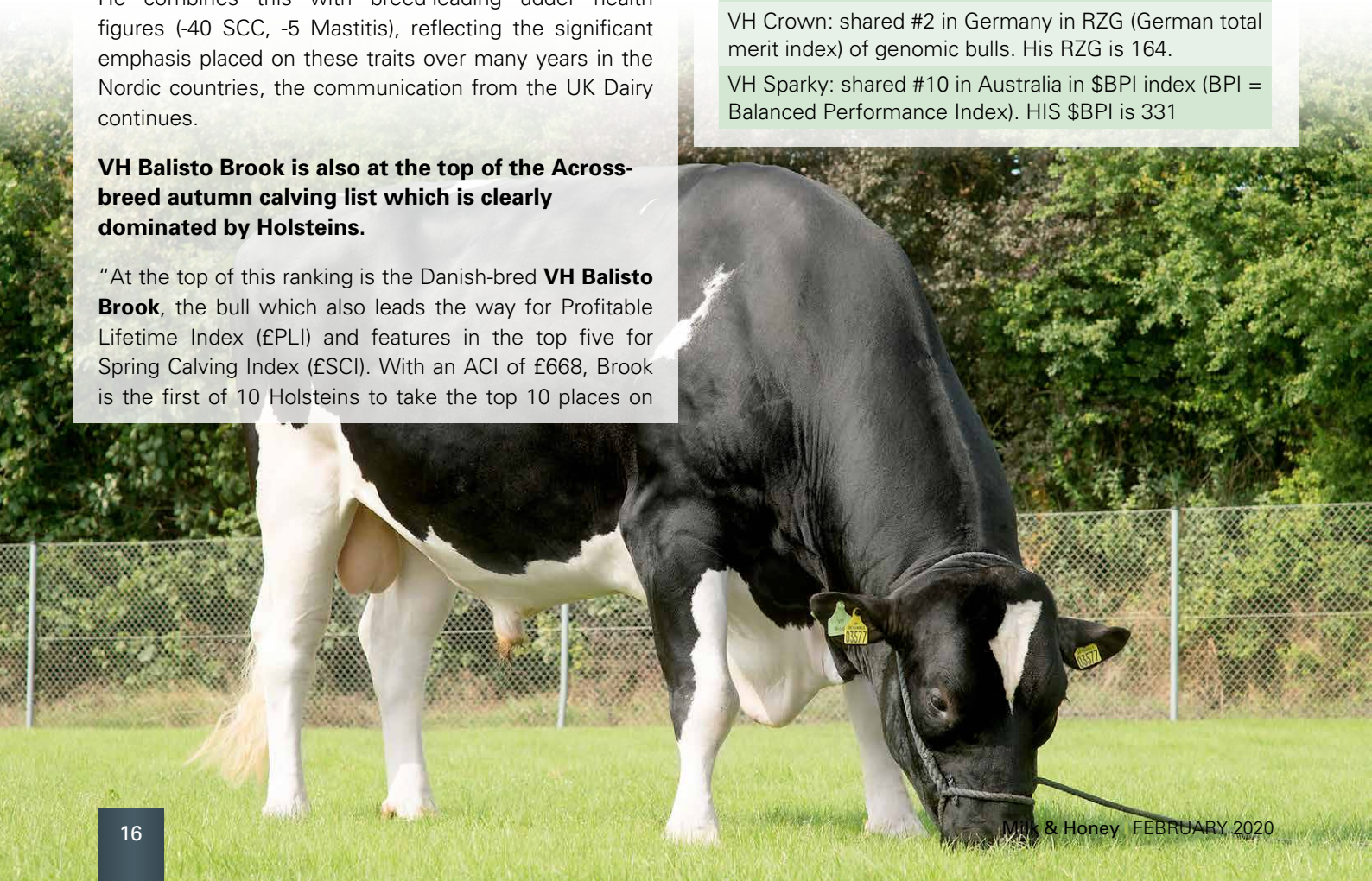
Claus Langdahl, VikingGenetics' Senior Holstein Breeding Manager says that VH Brook is an example of how long term selection for health and fertility as well as good components shows outstanding genetics that provides profitable cows for farmers all over the world. "High ranking genomic bulls show their worth – measured on milking daughters, and our selection philosophy works for the UK system", he says. M&H

GENETICS THAT WORKS NO MATTER WHERE YOU ARE

VH Brook: #1 in UK in £PLI (Profitable Lifetime Index) of proven bulls. His £PLI is 794. You have more info on this from the newsletter you had received from England.

VH Crown: shared #2 in Germany in RZG (German total merit index) of genomic bulls. His RZG is 164.

VH Sparky: shared #10 in Australia in $BPI index (BPI = Balanced Performance Index). HIS $BPI is 331



Hans Stålhammar, Christer Bergsten

Improved claw health by selection – a Nordic experience

Hans Stålhammar

Christer Bergsten

VIKINGGENETICS Breeding for what truly matters
VÄXA SVERIGE

AIM

The aim of this study was to investigate the phenotypic and genetic trends of claw health traits and Claw Health Index (CHI) under Swedish/Nordic conditions.

BACKGROUND

Claw trimmers record claw disorders during the routine trimming and according to the same protocol in Sweden, Denmark and Finland. The records are used for herd health management and to estimate breeding values. The CHI is based on seven different claw traits and has been available since 2005. The CHI is included in the Nordic Total Merit index.

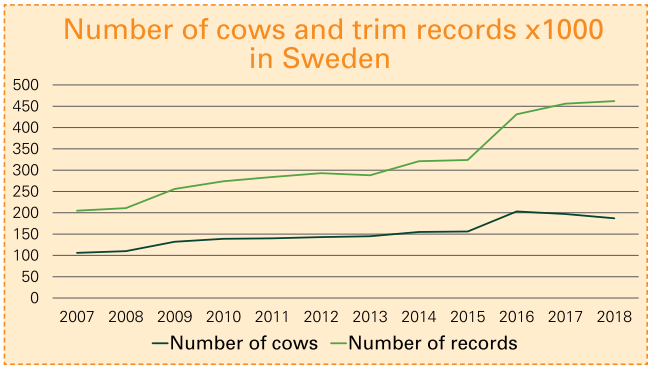
DATA

The proportion of cows with different claw disorders between 2007 and 2018 were retrieved from Växa Sverige. The number of recorded trimmings has increased and are presently nearly 500 000 per year. Breeding values on Swedish cows was calculated by the Nordic Cattle Genetic Evaluation (NAV) for cows born between 2007 and 2018.

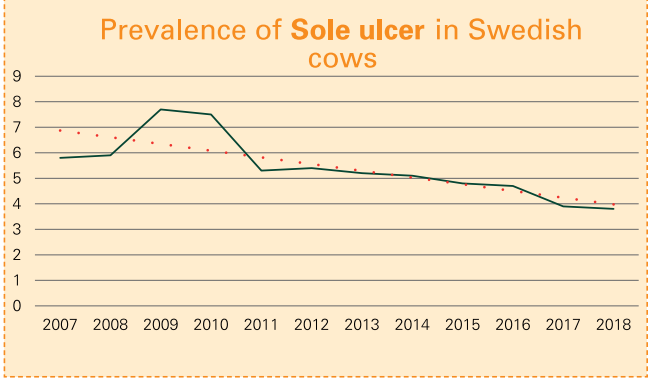
CONCLUSION

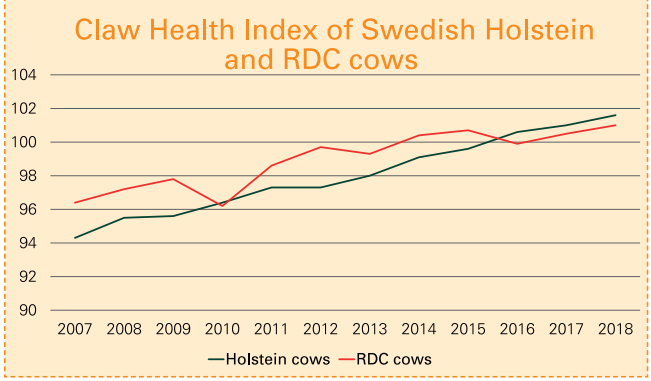
Clear phenotypic and genetic trends have been achieved for claw health in the Nordic countries, here shown under Swedish conditions.

RESULTS



Prevalence of Swedish claw records	Annual trend, % 2007-2018
Sole ulcer	- 0,3
Sole hemorrhage	- 0,7
Heel horn erosion	- 0,9
Digital & interdigital dermatitis	0,2
Cows without claw disorders	0,7





Die gemidelde grootte van Jerseykuddes in die Viking lande het noemenswaardig gestyg oor die laaste paar jaar

Denemarke Oktober 2019

Die suiwelbedryf in SA is huidiglik kommersieël gedrewe. Kuddes word groter met minder tyd om aan individuele koeie te bestee. Die behoefte aan gesonde hoë produseerders is belangriker as voorheen.

Ons suiwelrasse is nou totaal afhanklik van semeninvoere uit die buiteland, veral die lande met suksesvolle teelprogramme. Betroubare data is 'n prioriteit. Die doel van my besoek aan Denemarke was om hulle sisteem se resultate te evalueer en te sien in watter rigting hulle Jersey populasie ontwikkel het die afgelope agt jaar.

Vordering is die hoogste vir die eienskappe waarop die grootste gewig geplaas is in die Viking Jerseys populasie. Die grootste genetiese vordering is in vier eienskappe gemaak:

1. Die produksie van die ras vir 2019 (dit is werklik en nie ME) is 7552 kg M 6.0% BV 453 kg BV 4.26% Prot en 322kg Prot en CFP 775 kg vastestowwe. Die kombinasie van hoë kgM met sulke vastestowwe is merkwaardig. Die genetiese tendens vir produksie versnel reglynig. Dit is 'n wanpersepsie dat die huidige Viking Jersey populasie nie ook hoë produseerders is nie. Die negatiewe gewig op melk in hulle produksie indeks is nie 'n seleksie vir lae produksie nie maar wel dat beide Kg M en kg vastestowwe gelyktydig kan verbeter. Individuele koeie se produksies in kuddes staaf dit. Een voorbeeld is die kudde van Niels Ulrik Andersen met 'n gemiddeld van 8666kgM 5.90%BV 511kg BV 4.22%Prot en 365kg Prot. Daar is 417 koeie in melk in hierdie kudde.
2. Produktiewe lewe is die eienskap met die 2e hoogste vordering. Dit is die resultaat van seleksie vir gesondheids eienskappe en uierbouvorm, spesifiek uierdiepte.
3. Uiergesondheid is 3e op die lys. Met hoër produksie is uiergesondheid belangriker as ooit. Koste van behandeling is duur, antibiotika gebruik moet beperk word want wêreldwyd is weerstandigheid 'n probleem en dan die tydrowende effek van mastitis koeie tydens melking.
4. Vrugbaarheid van koeie en verse word steeds gehandhaaf ten spyte van die hoër produksie. Dit is in teenstelling wat met die SA Jersey populasie gebeur as gevolg van die gebruik van te veel bulle opeenvolgend wat lae dogter vrugbaarheid teel. Die Viking Jersey populasie was en bly die invloedrykste Jersey populasie wat vordering maak vir beide produksie en vrugbaarheid. Daar is nie een Jersey kudde wat van hormoon sinkronisasie programme gebruik maak in Denemarke nie.

Die "Nordic Total Merit/NTM" is 'n ekonomiese indeks wat wins in suiwelkuddes verhoog. NTM kan nie met die oog alleen gesien word in die koei nie maar wel in die bestuurs verslae van 'n kudde, dan word dit duidelik hoekom koeie met hoër NTMs meer wins maak. Dit is 'n samestelling van Viking Jersey se Navorsing en Ontwikkeling resultate. Navorsing in die SA suiwelbedryf vind nie meer plaas soos voorheen nie. Vikinggenetics het voldoende fondse en kundigheid om dit suksesvol te doen. Denemarke, Swede en Finland het hulle vermoëns bymekaar gegooi in 'n poel en vorder nou soveel vinniger. Noorweë maak ook insette hier met hulle sterk ekonomie. Die logiese afleiding is dat SA suiwelkuddes hierby kan aanhak deur Vinggenetics se produk wat hoofsaaklik semen is, te gebruik. Ons hoef nie te betaal vir hulle data insameling en finansiële insette nie. Huidiglik verhoog die VJ bulle met 3 NTM indekspunte per jaar. Hulle span bulle vir nasionale gebruik verander elke 6 tot 9 maande nadat 5000 tot 10,000 dosisse semen van 'n bul gebruik is. Gebruik dus die nuutste span bulle sodra hulle beskikbaar raak vir die vinnigste genetiese vordering en wins. Voorheen het

telers baie tyd bestee aan die seleksie van individuele bulle om in die kudde te gebruik. Daar is nie nou net een top bul nie maar 'n span top bulle. VG doen maandeliks teelwaarde ontledings en die bulle se NTM syfers verander baie vinnig. Dit is nie moontlik om al die bulle se name te probeer onthou nie. Let op na die NTM syfers en selekteer daarvolgens. Daar is altyd beter jong bulle beskikbaar. Gebruik al die bulle in die groep want VJ het reeds al die vooraf seleksie gedoen en betaal daarvoor. 'n Paringsprogram is belangrik om inteling te beperk.

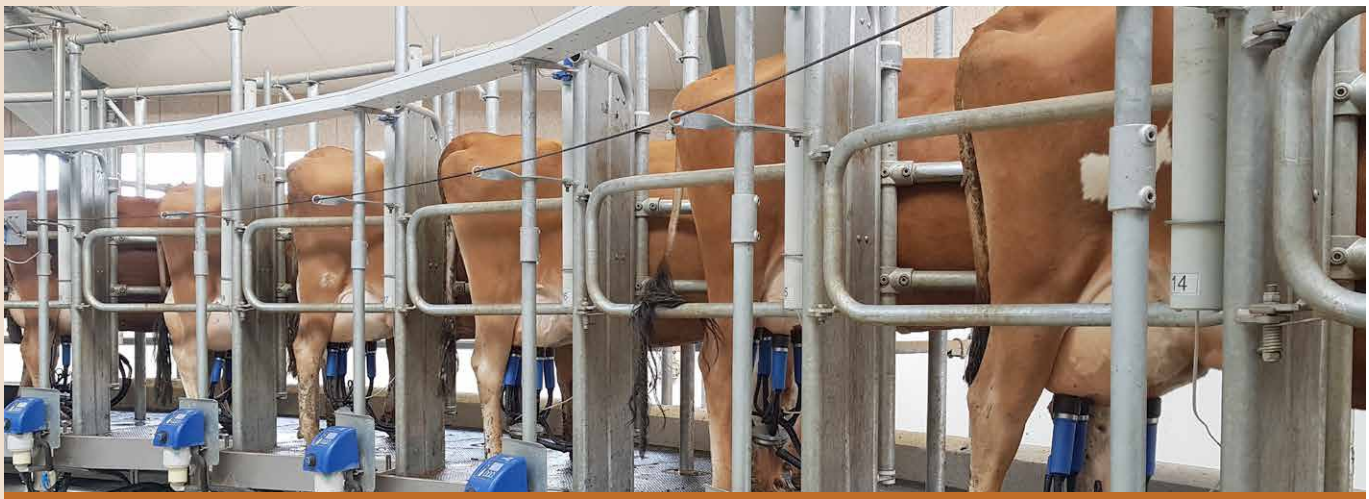
Die twee pilare van VJ se sukses is hulle uitgebreide data basis wat al baie jare in gebruik is en nou meer onlangs hulle belegging om 'n groot genomiese verwysings populasie te vestig. Daar is huidiglik 2700 bulle van VSA, Kanadese en Deense oorsprong plus 30800 koeie hierin. Vir 2019 is die syfer 'n verdere 10,000 vroulike diere en 500 bulle wat genomies getoets gaan word. Daar is reeds SA kuddes wat vroulike diere by Vikinggenetics laat toets. Hierdie is 'n tendens wat sal bly groei in die toekoms vir goeie redes. Die VJ kuddes toets toenemend al hulle verse in die kudde en gebruik dan hierdie inligting om te teel met die hoogste NTM verse wat met X-VIK semen insemineer word. Dit gee die vinnigste genetiese vordering. Gemiddeld 12.5% vleisbul semen word nasionaal op die swakste koeie in die kuddes gebruik.

Van al die semen wat gebruik word in hulle nasionale kudde maak X-VIK semen reeds 60% uit. Die beplanning is om dit te verhoog na 90% X-VIK semen. Een van VJ se eie inisiatiewe is om minder Jersey bulkalwers van kant te moet maak as gevolg van die etiese probleem daarvan. Teen Januarie 2022 sal daar net 10% Jersey bulkalwers gebore word deur die gebruik van geseksde semen. X-VIK semen gebruik moet ook in SA drasties verhoog word. Dit is billik geprys en sal meer vroulike diere besikbaar maak vir 'n mark wat Jersey vriendelik is in SA.

Tydens die kuddebesoeke het ek die kudde eienaars gevra om hulle beter koeie uit te wys. Feitlik sonder uitsondering was dit die koeie wat die minste probleme gee met hoë produksie. Dit is hierdie koeie wat ook bogemiddeld is op NTM. Dieselfde koeie het ook net Deense bulle in die stambome. Dit is die beste vir die kuddes om te bly fokus naamlik op die inherente positiewe eienskappe van hulle populasie, dit is vrugbaarheid, produktiewe lewe en uiergesondheid in kombinasie met die produksie vir hoë kg vastestowwe. Dit neem baie jare se seleksie om hierdie eienskappe gevestig te kry in 'n populasie. Behou dit.

Daar is ook ander ontwikkelinge by Vikinggenetics wat in 2020 die NTM se waarde gaan verhoog. Die een is die meet van suiwelkoeie se voeromsettings doeltreffendheid dmv 3D kameras in kuddes. Voorheen was dit nie moontlik om dit akkuraat in die melkstal te meet nie. Nou is dit moontlik sonder om die kudde roetine te benadeel. Die koste en onderhoud van die kameras is laag en belangrik, die data is betroubaar. Dit is noodsaaklik om te weet watter tipe koei die effektiefste is. Die emissie van suiwelkoeie se metaan en koolsuurgas word ook nou gemeet. In EU is GHG/Greenhouse Gas 'n belangrike besprekingspunt met fondse vrylik beskikbaar vir navorsing oor die onderwerp. Hierdie data sal ook by die NTM ingesluit word in 2020. Die oorerfbaarheid van melkkoeie se emissies is 20% wat seleksie vir melkkoeie met laer bydrae tot aard verwarming moontlik maak. Die uitdaging is om GHG te verlaag sonder om produksie prys te gee. Suiwelkuddes moet pro-aktief optree al is herkouers net een van die bronne van GHG. Die persepsie van die verbruiker dat hulle minder beesvleis en suiwelprodukte moet eet kan met die inligting reggestel word. Die goeie nuus vir die Jerseyras is dat kleiner koeie se voeromsettings doeltreffender is as die van groter rasse. Diesefde geld vir GHG emissie nl voorlopige data dui op 20% laer metaan- en koolsuurgas produksie vir die Jersey koei vs die groter rasse se koeie.

Bulseleksie van Viking Jerseys is nou baie maklik vir die SA suiwelkuddes. Daar is nog enkele uitstekende dogterbeproefde bulle beskikbaar. Daar is drie bulle wat gebruik kan word. VJ GISLEV met 'n NTM van 24. Hy is 'n hoë produksie bul en 'n besonderse suksesvolle vaar van seuns onder andere Garant, Gutz, Gates en Gaint wat



Viking Genetics se lede belê deurlopend in moderne toerusting en tegnologie

nog 'n groter invloed gaan laat op die VJ populasie. Die ander beproefde bul is VJ HUUS met NTM van 19. Die 3de beproefde bul is HUZAR. Sy NTM is 16. Hy is 'n bul wat baie goeie gesondheidseienskappe teel. Sy uierindeks is 127 wat byna drie standaard eenhede bo die ras gemiddeld is. Enige van die die drie bulle kan ingesluit word in die bulgroep saam met jonger genomiese bulle. Die voordeel sal wees om risiko te beperk met die gebruik van laer betroubare genomiese bulle. Daar is verskeie genomiese bulle huidiglik wat almal gebruik kan word. Gebruik minstens drie van die volgende groep: Gutz, Sort, Luxi, Hamlet, Hirts, Wilder en Kliber. Van hulle het X-VIK semen beskikbaar wat ideaal op die verse in 'n kudde gebruik moet word. Die konsepsie van die X-VIK semen op koeie het baie verbeter in Denemarke. Met die vinnige genetiese vordering wat gemaak word by Viking Jersey is die aanbeveling dat genomiese bulle met 'n NTM van 20 en hoër gebruik word. Hou die nuutste bulgroepe se beskikbaarheid dop en moet veral nie 'n enkel bul te lank gebruik nie. Daar sal altyd 'n nuwe en beter bulgroep wees.

Viking Jerseys se teelprogram bestaan uit die aanvanklike uitsoek van die hoë indeks vroulike diere in hulle populasie wat dan met voorgestelde bulle vir die individue geïnsemineer word. VJ gebruik 'n program "EVA/Evolutionary Algorithm for Cattle Selection" wat toekomstige inteling vd ras van die spesifieke kombinasies bepaal. Dit optimaliseer genetiese vordering terwyl inteling beperk word. Die aanteel word genomies getoets en die GEBV plus die verwantskappe binne die ras bepaal watter verse as embrio skenkers benut gaan word. Dieselfde geld vir die bulkalwers. Let op dat VJ hiermee verseker dat daar altyd laer verwante teelmateriaal gebruik word in die ras. Daar word huidiglik 300 bulletjies per jaar uitgesoek waarvan 35 dan later gebruik sal word as vaars. Die beste genomiese bulletjies word onmiddelik as vaars van seuns gebruik. Die eerste semen word op potensiële bulmoeders gebruik. Die teelprogram is goed gestruktureerd en ruim befonds. Al hulle telers ondersteun en vertrou hulle teelprogram. Viking Jersey vervul nou die funksie wat ons plaaslike bedryf moes vervul het. Hulle strukture is deeglik en lewer die resultate soos die genetiese vordering van drie NTM punte per jaar. Hulle bestuur inteling in die ras ook baie doeltreffend.

Die Viking Jersey populasie en strukture het soveel om aan ander lande se Jerseys te bied. Hulle is die bron vir A2A2 en BB melk. Hulle bemark net suiwer Jersey bulle se semen: Bulle moet 99,5% suiwer Jersey wees. Geen JH1C bul sal meer bemark word nie. VJ is die beste bron vir bulle met lae verwantskappe. Vir die SA Jersey kuddes is dit goeie nuus. Viking Jerseys bied ons die geleentheid om saam met hulle vooruit te gaan. M&H

VIKING JERSEY BREEDING GOALS 2025

VIKINGGENETICS
Breeding for what truly matters

Full description of all phenotypic goals

Annual Production per cow:

- 8,100 kg milk
- 6.25% fat, 4.25% protein
- 850 kg fat + protein

Conformation:

- 126-132 cm high (in 1st. lactation)
- 450 kg live weight (mature)
- Strong feet and legs
  - Dark hoofs

Other traits:

- Milk components

High frequency of preferred Caseins

Current level:

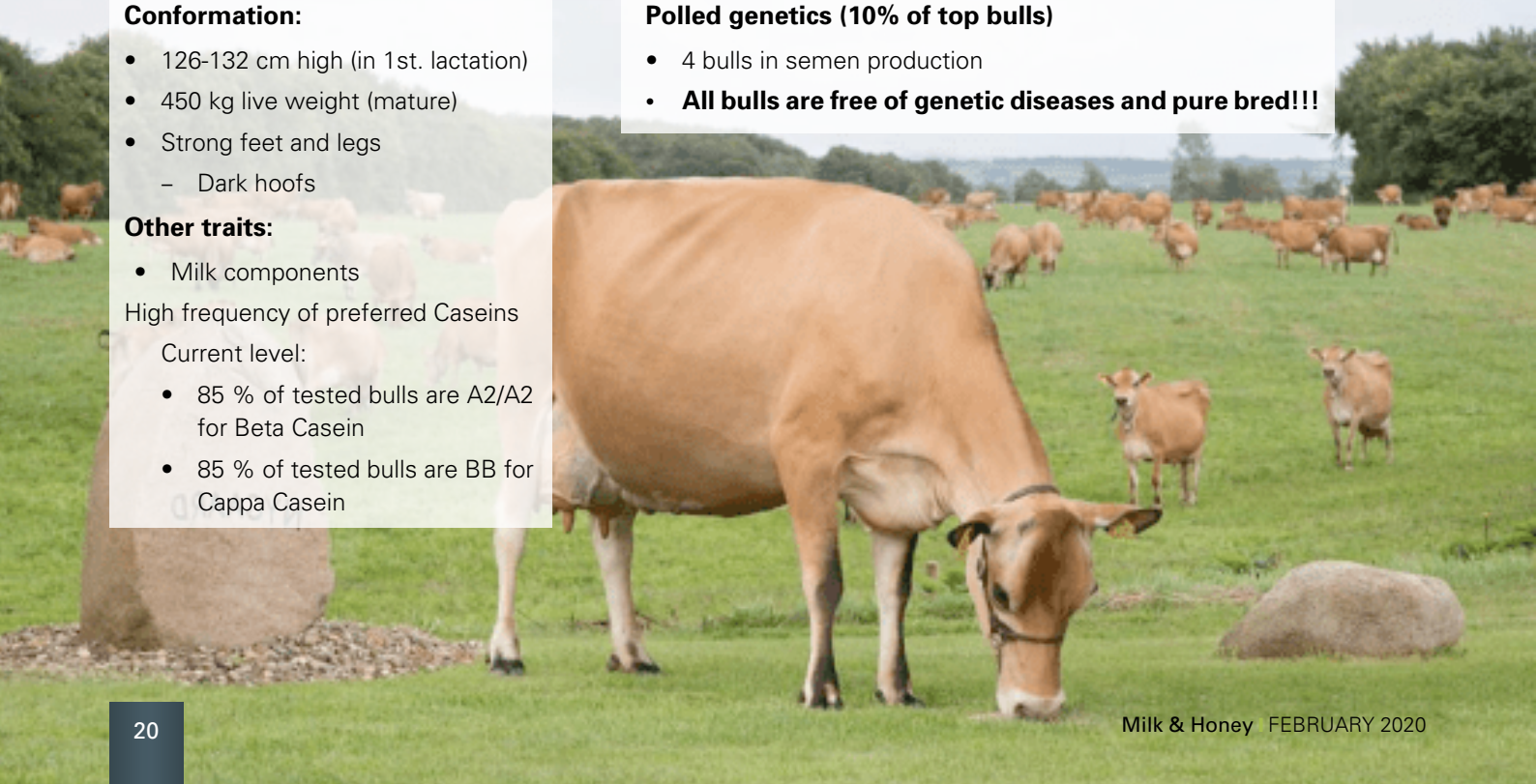
- 85 % of tested bulls are A2/A2 for Beta Casein
- 85 % of tested bulls are BB for Cappa Casein

Sustainability & efficiency

- App. 20% less CO2 & Methane than big cows
- App. 20% less Nitrogen & Phosphate than big cows
- App. 20% more feed efficient

Polled genetics (10% of top bulls)

- 4 bulls in semen production
- **All bulls are free of genetic diseases and pure bred!!!**



Just the facts, ma'am

DairyNZ

This article is part of Inside Dairy's occasional look at milk as a sustainable nutrient-dense food, alternative plant-based 'milks' and synthetic substitutes.

Fact: New Zealand is already the world leader in sustainable nutrient-dense dairy products.

Fact: Along with the export of premium dairy products, a valuable 'export' to the world would be our dairy farming expertise. As revealed by the International Dairy Federation (IDF) New Zealand Committee, if all dairy producers were as efficient as we are, more than half of the global emissions from dairy production could be eliminated. This is an interesting addition to the discussion about New Zealand leading the world in addressing global climate change.

DairyNZ's position is that when people decide what food to eat, they need accurate, science-based information grounded in the New Zealand context and aimed at the best health and sustainability outcomes.

In keeping with this, *Inside Dairy* brings you some facts to have at your fingertips should you wish to get involved in the conversation, either in person or on your social media feeds.

ENVIRONMENTAL

- New Zealand dairy is 64 percent more emissions-efficient than the global average.
- New Zealand dairy products are so sustainable that a litre of our milk shipped to Ireland (the next most efficient producer) would still have a lower emissions profile than milk produced there.
- If milk is to be produced anywhere, it should be here. At 0.80kg CO2/kg MS, New Zealand milk's emissions are world leading and well under half the global average of 2.5kg CO2/kg MS.
- The greenhouse gas (GHG) footprint of plant-based alternatives is rarely acknowledged. Soy beverage can have double the GHG footprint of New Zealand milk per unit of nutrition, and rice beverage 10 times.
- Fermentation-produced proteins (using cells) also have substantially higher footprints – up to 50 times higher.

NUTRITIONAL

- Most countries recommend at least one serving of milk (250ml) or milk products daily, some up to four each day. New Zealand dietary guidelines recommend at least two to three servings.
- Although there are plenty of manufactured plant-based alternatives available, they do not contain the nutrition of milk naturally produced by New Zealand dairy cows. Some carry warnings that they're not suitable as a complete milk replacement for children under the age of five.
- While some essential nutrients may be present in plant-based alternatives, they are not always in a form that can be absorbed by the human digestive system.
- Many of the nutrients in the plant-based beverages have been formulated at the factory in order to mimic natural dairy.

Note: For scientific references go to dairynz.co.nz/plantbasedbeverages

Full article: www.dairynznewslink.co.nz M&H

NUTRIENT CONTENT: COW'S MILK & PLANT-BASED

	Content per 100mls			
	Protein (g)	Calcium (mg)	Vitamin D (micrograms)	Vitamin B12 (micrograms)
Dairy	3.6	124	1	0.4
Almond	0.4-1.5	75-120	0-2.5	0-1
Soy	3.2-3.3	120-160	1-2	0.4-1
Oat	0.3-2.5	100-120	0-1.5	0-0.5
Hemp seed	1.4-2.2	No data	No data	No data

Article summarized by Simon Alderson-Smith, Genimex

Individual measure of feed intake on in-house commercial dairy cattle using 3D camera system

(Abridged version)

Jan Lassen, Jørn Rind Thomasen, Rikke Hjort Hansen, Glenn Gunnar Brink Nielsen, Eli Olsen, Peter René Bolvig Stentebjerg, Niels Worsøe Hansen, Søren Borchersen I VikingGenetics, Ebeltoftvej 16, 8960 Randers, Denmark I jalas@vikinggenetics.com (Corresponding Author)
Danish Meat Research Institute, Gregersensvej 9, 2630 Taastrup, Denmark

INTRODUCTION

Feed intake and feed efficiency are traits with a high economic value for the farmer. Even a small improvement of the efficiency will have a huge effect for the farmer. Feed efficiency can be improved both through management and through genetic selection. One of the challenges in making genetic improvement is lack of data in the amount the geneticists are used to. Hardly any country has access to thousands of animals with registrations, and often data is old and has been collected in a very short period of time of the cow's life. Diverse equipment is available for making registrations, but they are expensive and time-consuming for commercial farmers to invest in. Therefore new equipment is needed, which is precise, robust, inexpensive and does not inflict on daily management for the farmer. In this study a system of Microsoft Xbox One Kinect v2 cameras were installed in a dairy cattle farm to be used both for identification of the cows as well as for making feed intake measurements. This was done together with milk production. The aim was to estimate repeatability for feed intake and estimate the relationship to days in milk as well as milk production

CALCULATION OF FEED VOLUME

The feed along the full feeding table is divided into virtual boxes, as it provides a manageable measure for the feed volume. Identification of the cows head outline is necessary to measure the feed volume measure, as while the cow is eating it is not possible to calculate the feed volume of the virtual boxes it covers. This is visualized in figure 1.

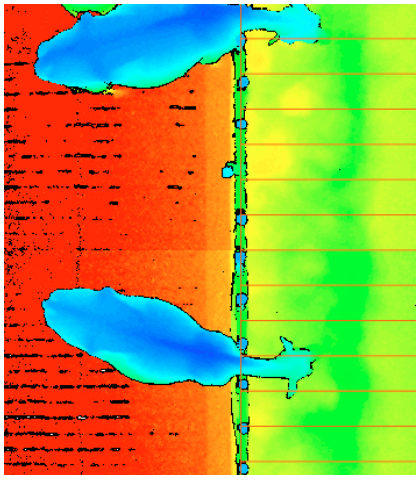


Figure 1. Depth images illustrating the virtual boxes marked with red lines. The various colours resemble the height of the object in every pixel. The green piles are feed.

By measuring the height of the feed pile on the floor, the volume of the feed can be calculated. The feed height is determined in every pixel, and summing up the voxels within a virtual box leads to a volume in litres for each virtual box. The feed volume is determined continuously to ensure information before and after, the cows are eating.

DISCUSSION

The repeatability found in this study is very high compared to other studies. Data coming from research facilities often have some sort of restrictions on the amount of feed, as well as access to the containers, where feed intake is measured. In this study all cows have full access to all of the feeding area and never disturbed in access.

In early lactation, phenotypic correlation to milk yield and days in milk were positive, which indicates that milk yield increases in early lactation with high feed intake, and also with days in milk before 100 days after calving. In mid to late lactation the phenotypic correlation to milk yield was positive, but close to zero, which indicates that high yielding cows also had high feed intake. The phenotypic correlation to days in milk was negative, which indicates, that cows late in lactation had a low feed intake. This is all as expected and in agreement with other studies. The system does not allow us to investigate, if cows are sorting in the feed at the current stage, but this is not possible in other systems either.

CONCLUSION

The results show, that it is possible to obtain very repeatable measures of feed intake using 3D cameras. The phenotypic correlation between feed intake, milk production and lactation stage is in agreement with data obtained in other and much more expensive systems, that can make feed intake records in dairy cows.

Full article available:

https://pdfs.semanticscholar.org/639f/210459ee48373dd9bd405f0e34db259ad2a9.pdf?_ga=2.186069742.611090408.1578993838-1511066673.1578993838

Kasia Kupisiewicz, Project Manager R&D, VikingGenetics

No relevant correlation between progressive motility and field fertility

VIKINGGENETICS
Breeding for what truly matters

Progressive motility is one of the semen quality parameters evaluated in the laboratory, and it describes the ability of spermatozoa to progressively move towards oocyte and by many seen as directly correlated to field fertility.

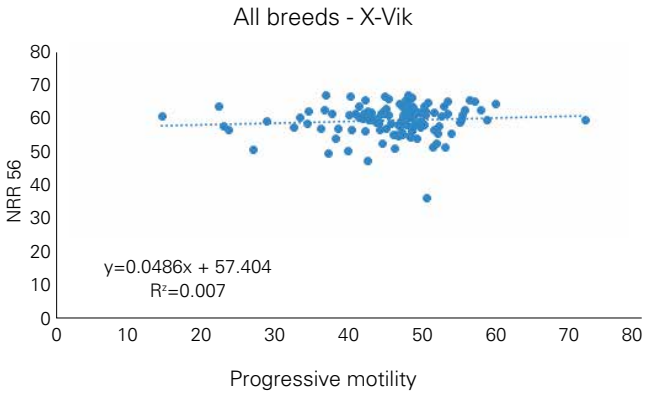
Progressive motility can be either evaluated subjectively using the microscope or using CASA instruments. At VikingGenetics, progressive motility is routinely measured for sexed semen but not for conventional. Semen production in our laboratory in Assentoft, Denmark is equipped with IVOS II (CASA) instrument that allows objective, and precise measurements of percentage of progressive motile sperm cells.

An insemination trial performed by VikingGenetics showed that progressive motility was indeed correlated to field fertility but could not add more value than measuring concentration and viability.

Addressing the increasing interest for progressive motility, we investigated the correlation between progressive motility and field fertility of sexed doses produced at VikingGenetics. Field fertility is represented by non-return rate of 56 days (NRR 56), which is an internationally recognized measurement for fertility. NRR 56 describes a percentage of dams not returning to estrus within 56 days after insemination.

The data were retrieved for all sexed lots produced in 2017, 2018 and during first quarter of 2019 and nearly 3900 different collections were evaluated. The average of progressive motility for the bull was correlated to his NRR 56.

Described on the graph below is average progressive motility of sexed doses for the bull in percentage (X-axis) and NRR 56 of the bull, also in percentages. The progressive motility is plotted against NRR 56 and there is no correlation between these two parameters. The correlation is illustrated by R2 value. R2 value can be between 0 and 1. The R2 value close to 0 means no correlation and the other way around, the closer the R2 value to 1 the greater the correlation between the two parameters. The calculated R2 value of 0.007 means that for the used data, there is no correlation between progressive motility and field fertility. M&H



BOTH LIC NEW ZEALAND AND VIKINGGENETICS BASE THEIR FINAL BREEDING INDEX ON THE FINANCIAL VALUE OF THEIR SIRE.

We summarize them below

Weights on health, production and conformation in NTM

VIKINGGENETICS
Breeding for what truly matters

The weights in NTM are set to establish a genetic progress for all the economically important traits, the weights are slightly different between breeds, but in common is a high focus on health traits.

An increasing weight on health traits in NTM over the years is a big success due to greater awareness of cost in dairy production. Dairymen manage to have less cost per kg for produced milk and healthy cows will not take more attention than necessary and give the highest profit.

HEALTH

50%

TRAITS INCLUDED
Udder health
Daughter fertility
General health
Hoof health
Calving (direct & maternal)
Young stock survival
Longevity

PRODUCTION

30%

TRAITS INCLUDED
Production index
- Milk kg
- Protein kg
- Fat kg

Growth

CONFORMATION WORKABILITY

20%

TRAITS INCLUDED
Udder conformation
Feet & legs
Milkability
Temperament

BW

MEANING
Genetic ability for breeding replacements

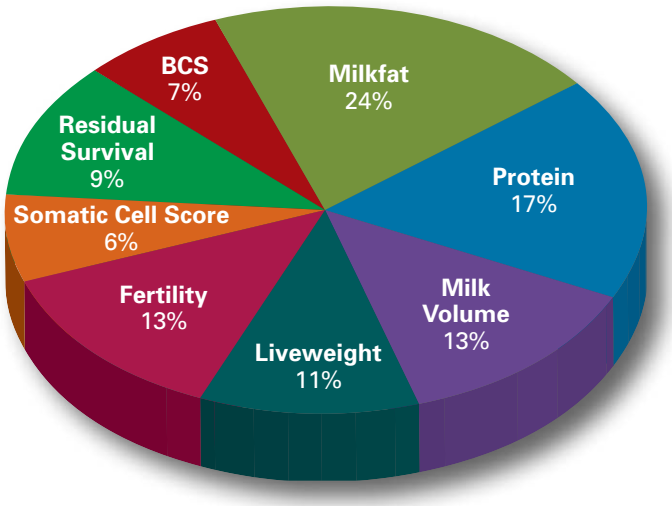
USE FOR
Selecting bulls and replacements and purchasing hifers

$ TERMS
+68 = expected to breed daughters that are $34 profitable than daughters of a 0 BW cow

TRAITS
Milkfat, protein, milk volume, liveweight, fertility, somatic cell, residual survival and body condition score

LIC
LIVESTOCK IMPROVEMENT

2020



We move fast, but are we moving too fast?

When genomic selection was first being introduced, whether this would result in more or less inbreeding for the animals was a topic of debate. As we can now scientifically demonstrate, it has not resulted in more inbreeding for VikingHolstein. So, the answer to the headline is "NO".

Genetic progress is now at 4.3 NTM units per year – the aim is 4.0 NTM units per year. This is measured from the sale of VikingHolstein semen doses. There is no doubt that the VikingGenetics breeding programme is very efficient, but how is inbreeding doing?

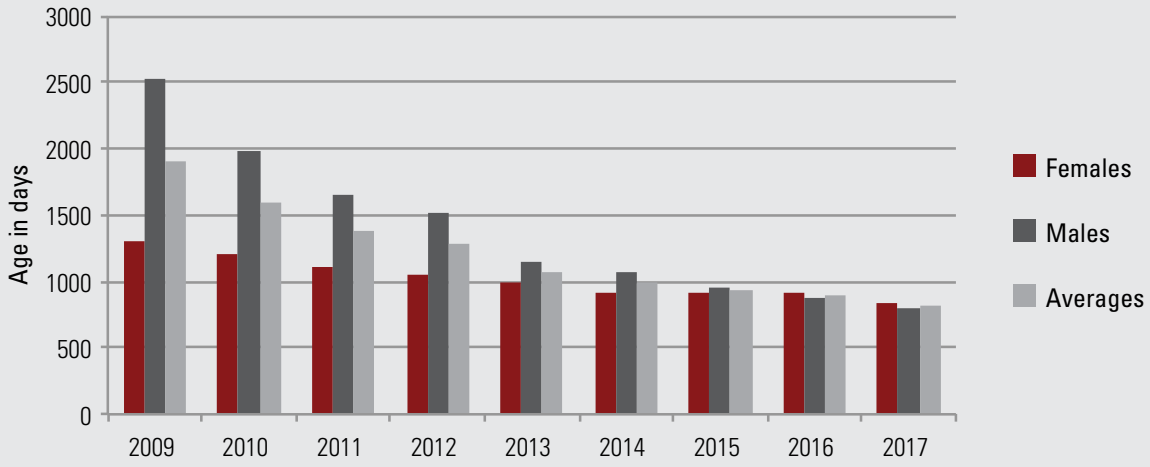
From basic breeding theory, we know that a very one-sided use of the best bulls and cows leads to high genetic progress, but also much inbreeding. Genetic variation will be reduced and with this, the chance of maintaining genetic progress in the long run. Plus, we can face an increased risk of genetic defects. Finding the right balance between these two parameters – genetic progress and inbreeding – is essential.

GENERATION INTERVAL

The main factor for high genetic progress is the generation interval. In Figure 1 we can see the development between 2009 that was before genomic selection and today. It is measured on all purchased VikingHolstein bulls during this period. The figures show in particular bulls and not females in 2009 that bulls were 2,500 days old when they had sons born and now they are almost 800 days old.

The parental average falls from 1,910 days to 819 days – less than half. This means that the parents were 18 months old at time of insemination. For bulls in particular, we can shorten the interval even further, today it is primarily foreign sires of sons that are a bit older when the semen is available.

Figure 1. Change in age of parents measured in days from 2009 to 2017 for VikingHolstein bulls



PEDIGREE VARIATION

We purchase and start semen production of approx. 90 VikingHolstein bulls a year. Almost all of these bulls will be used on high index females and thus have a chance to become the sires of the next generation. We also use a few foreign bulls. Genomic testing of all animals in a herd is done on many herds today, which certainly contributes to VikingGenetics finding good bulls in many of these herds. This high degree of variation in the bulls' pedigree is the first indicator that we have inbreeding under control.

INBREEDING CONTROL

To control the balance between genetic progress and inbreeding, VikingGenetics uses an optimisation programme called EVA (EVolutionary Algorithm). The results from the programme are included in the total evaluation both when it comes to selecting females for the embryo transfer programme and when purchasing the next generation of bulls. It is a very useful programme that is also used in the breeding programmes for pigs, elks and fish.

One of the results from the EVA programme shows inbreeding in the population. According to the Food & Agricultural Organisation (FAO), a population is sustainable if inbreeding increases by less than 1% unit per generation. In VikingGenetics practice, inbreeding is only increasing by approx. 0.4 precentage points per 819 day generation interval.

By way of conclusion, increased genetic progress has had no negative effect on the annual change in degree of inbreeding, but of course, it has had a positive effect on inbreeding when measured per generation.

Genetics and liveweight gain influence heifer puberty timing

DairyNZ's latest research indicates an 'age at puberty' trait has potential to increase the rate of genetic improvement in cow fertility. Two of the greatest influences on the timing of puberty are liveweight gain and genetics.

WHY IS 'AGE AT PUBERTY' IMPORTANT?

First-calving heifers make up approximately 20 percent of the herd. To calve between 22 to 24 months old, heifers need to get in calf between 13 to 15 months old. This timeframe helps them calve within the first three weeks of the season, giving them a better chance of getting back in calf early and remaining in the herd. To achieve this timeframe, heifers need to reach puberty (i.e. sexual maturity) early enough to conceive during the first three weeks of the heifer mating period.

REMOVING THE 'BRAIN-BLOCK' TO PUBERTY

Puberty is triggered by signals from the brain to the ovaries. By eight months old, the hypothalamus and pituitary glands in a heifer's brain are developed sufficiently for the heifer to start cycling.

However, first heat and ovulation are 'blocked' because high numbers of receptors in the brain receive the ovary-produced sex hormone, oestradiol, as a strong negative feedback loop that prevents frequent pulses of luteinising hormone secretion required for ovulation. Removal of this oestradiol 'brain-block' involves a complex hormone pathway that reduces the brain number of oestradiol receptors, and is influenced primarily by liveweight gain and genetics.

KEY POINTS

- Puberty is blocked at the brain until a threshold liveweight (~50 percent of mature liveweight) is reached.
- Management factors during heifer rearing affect when this threshold liveweight is achieved and, therefore, the timing of puberty.
- Genetics also influence the timing of puberty, as puberty occurs at an earlier age and at a lighter threshold liveweight in heifers with a higher genetic merit for fertility.
- Age at puberty' may be a useful predictor trait to evaluate cow fertility earlier and more accurately.

LIVEWEIGHT GAIN DRIVES THE TIMING OF PUBERTY

It is well-established that heifers reach puberty by about half their expected mature liveweight. For example, a 450 kilogram (kg) mature liveweight cow will reach puberty by about 225kg. Hence, poor growth rates will delay the time to puberty.

To attain puberty before the start of mating at 13 to 15 months old, heifers should be reared to achieve liveweight targets of 30 percent, 60 percent and 90 percent of estimated mature liveweight at six months, 15 months (mating), and 22 months (pre-calving). Check out best practice growth and rearing information at dairynz.co.nz/incalf

A recent study of 10 commercial farms revealed only 60 percent of heifers had reached puberty by the start of mating (range between farms was nine percent to 93 percent).

Predictably, younger animals and those at a lower body condition score (BCS) below 4.5 units were at most risk of being pre- pubertal at mating start date. A similar trend was reported in an Irish study; thus, heifers that are at least 14.5 months of age and 4.5 BCS units at the start of mating are more likely to have reached puberty.

The large percentage of pre-pubertal animals at mating start date on many farms indicates more attention is required to ensure heifers reach liveweight targets to prevent subsequent issues with reproductive performance.

GENETICS ALSO AFFECT THE TIMING OF PUBERTY

Genetics modify the effect of liveweight on the timing of puberty. Studies in beef cattle indicate approximately 30 to 40 percent of the variation in puberty onset between animals can be explained by their genetics. This moderate level of heritability is comparable to milk production traits and demonstrates the puberty trait will respond to selective breeding. Evidence in dairy cattle is limited, but recent work* supports a similar heritability.

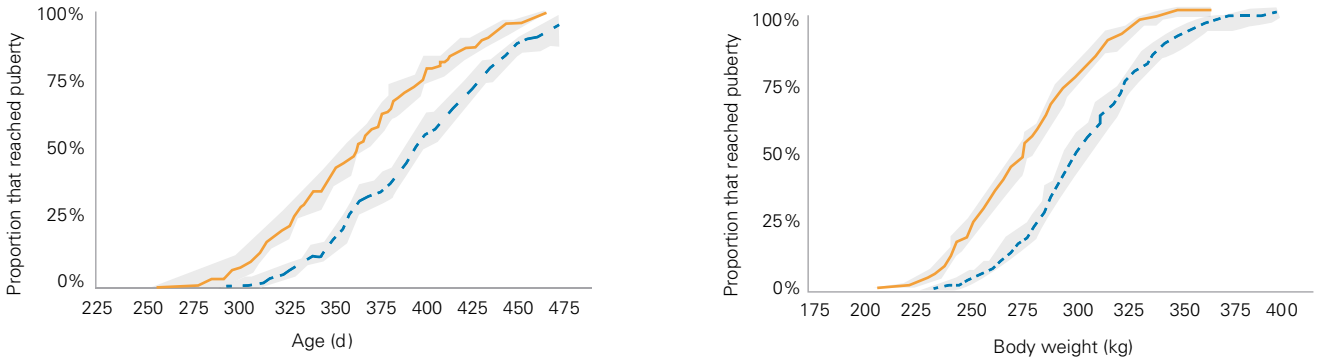
Several studies indicate that animals with a greater proportion of North American Holstein-Friesian ancestry and/or a heavier liveweight Breeding Value (BV) take

longer to reach puberty, putting them at a greater risk of not cycling before the start of mating.

DairyNZ-led research* has recently demonstrated that heifers with a high Fertility BV (+5 percent) reached puberty 21 days earlier than those with a low Fertility BV (-5 percent), which meant they were 25kg lighter and at a lower percentage of mature liveweight (51 vs. 55 percent) (Figure 1). These groups grew at the same rate and did not differ in other traits.

These results indicate the oestradiol 'brain-block' was removed earlier in genetically fertile animals; consequently, 93 percent of high Fertility BV heifers but only 76 percent of low Fertility BV heifers reached puberty by the start of mating.

Figure 1: The proportions of high (+5) and low (-5) Fertility BV heifers that had reached puberty at each age and liveweight (based on image from and also from DairyNZ-led research*)



- High Fertility BV (solid line)
- Low Fertility BV (dashed line)
- Grey shading represents 95% confidence intervals

> *"MORE ATTENTION IS REQUIRED TO ENSURE HEIFERS REACH LIVEWEIGHT TARGETS TO PREVENT SUBSEQUENT ISSUES WITH REPRODUCTIVE PERFORMANCE."*

PUBERTY AS A PREDICTOR TRAIT OF GENETIC MERIT FOR FERTILITY

The earlier onset of puberty in high Fertility BV heifers indicates it could be a useful predictor trait for cow fertility in genetic evaluation. Earlier information would also be available on a sire's offspring than calving- and mating-focused cow fertility traits.

Puberty also appears to be a better genetic indicator of subsequent lifetime fertility than heifer in-calf rates, which don't appear to have such a strong genetic relationship to future fertility.

Further DairyNZ-led research* now underway will determine the genetic relationship between puberty and cow fertility traits using several thousand animals, while ensuring earlier onset of puberty doesn't compromise genetic gain in other economically important traits (e.g. milk production) that make up Breeding Worth (BW).

IMPROVING THE RATE OF GENETIC GAIN IN FERTILITY

Although fertility is a low-heritability trait, genetics will influence a cow's lifetime reproductive performance. The overall variation in reproductive performance among animals is very high, meaning the genetic contribution is still well worth capturing through selective breeding.

The Fertility BV is currently estimated using routinely recorded calving and mating traits:

- PM21 (inseminated within 21 days of planned start of mating in lactation 1, 2 and 3).
- CR42 (calving rate in the first 42 days after planned start of calving in lactation 2, 3 and 4).

Although these are robust values, they don't fully describe the genetic variation in the fertility trait.

It is hoped that the moderately heritable 'age at puberty' trait will allow us to evaluate cow lifetime fertility earlier, and with increased precision, so the Fertility BV can better capture the genetic variation in this trait. The more genetic variation we can capture, the better the rate of genetic gain in fertility the sector can achieve.

** This research has been carried out under Pillars of a New Dairy System, which is funded by dairy farmers through DairyNZ and by the Ministry of Business, Innovation and Employment, with aligned core funding for fertility from AgResearch.*

Additional funding and resources provided by Fonterra, LIC and CRV Ambreed support this key science platform. For more information, see dairynz.co.nz/pillars

Full article: www.dairynz.co.nz

SA DAIRY 2020

Pasture based dairy production workshops

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We are proud to advise that we will once again be holding a series of Dairy 2020 workshops this year

THREE WORKSHOPS WILL BE HELD IN THE EASTERN CAPE DURING THE WEEK OF 14 APRIL 2020

14th April 2020 - George
15th April 2020 - Eersterivier
17th April 2020 - Bedford

TWO WORKSHOPS WILL BE HELD IN NATAL DURING THE WEEK OF 21 APRIL 2020

21st April 2020 - Underberg
23rd April 2020 - Nottingham Road

SOME OF THE INTERNATIONAL SPEAKERS

BASIL DOONAN

"My expertise lies primarily in the areas of grazing management and animal production systems but particularly related to the terms of reference - Agricultural Extension and Adoption and at a technical level, feedbase production and management and measurement and management of total grazing pressure"

DAVID CHIN

General Manager, Operations & Service LIC and part of the Leadership Team at LIC

Responsible for AI Breeding unit, Herd testing unit, LIC's bull farms, DNA and animal health laboratories and LIC's on farm services.

PETE WICHMAN

Contract milker for Coilin and Dale Armer.

Milking two herds of 1000 cows each.

Inseminator for LIC (insemination 4000 cows on the Armer farms and neighbours).

Pete is a person with amazing organizational skills and work ethic. Owners and managers will learn from him.

PLEASE SAVE THE DATES

Exact dates, programs, topics, detailed CV's and more information will be available shortly.