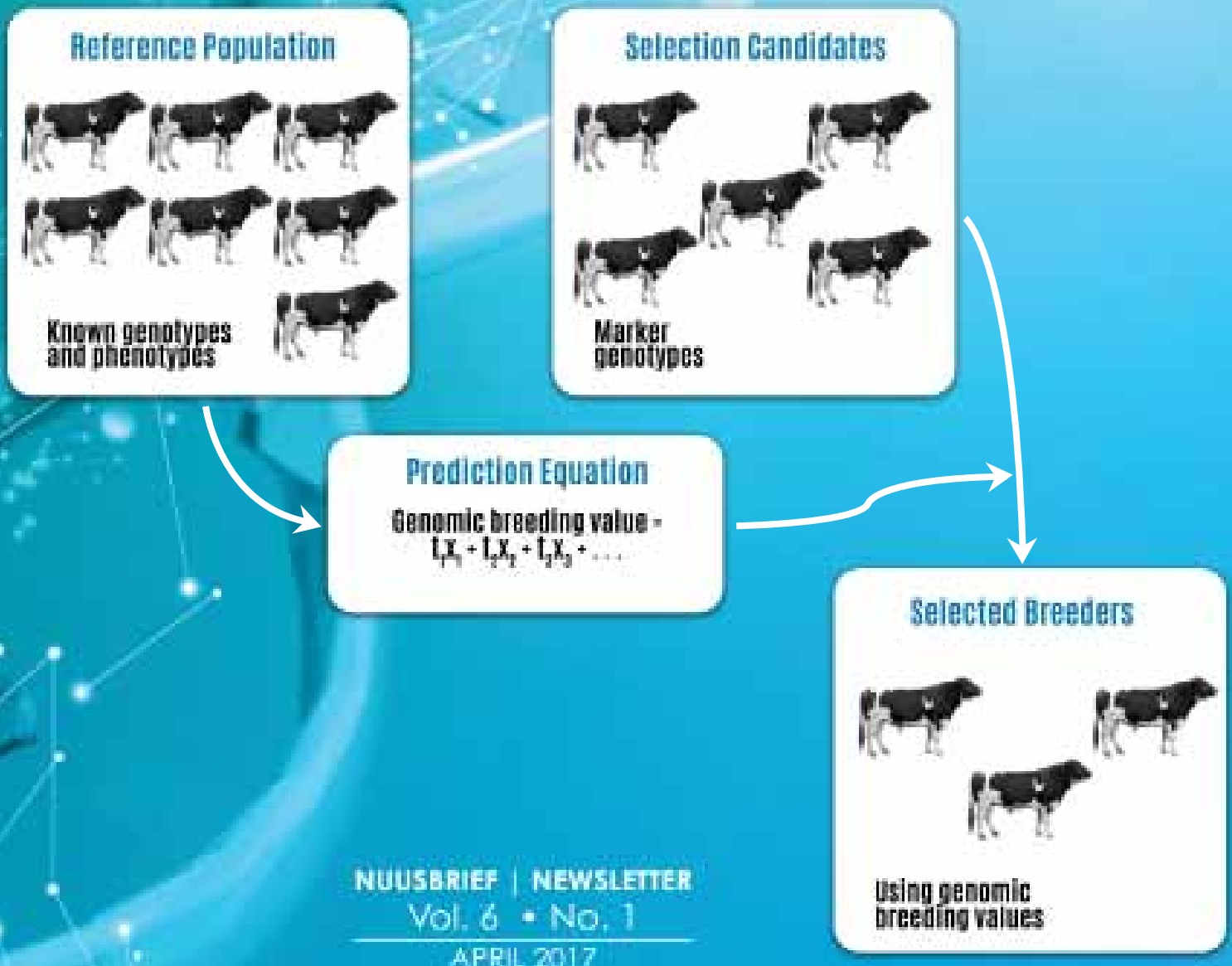
Holstein



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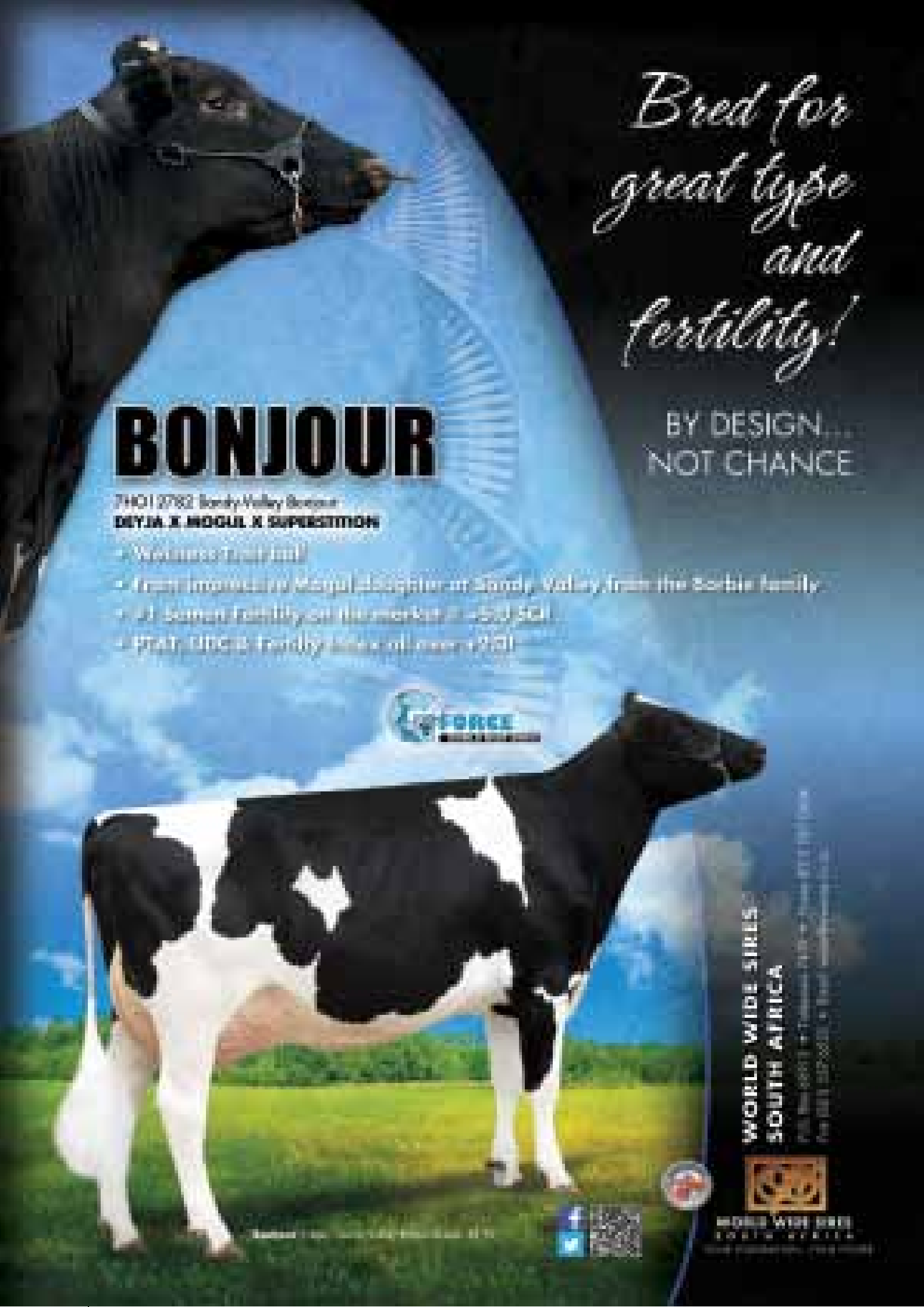
Bred for great type and fertility!
BONJOUR
BY DESIGN... NOT CHANCE
DEYJA X MOGUL X SUPERSTITION
WORLD WIDE SIRES SOUTH AFRICA

Inhoud *Contents*

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SA Holstein groet Melissa Erwee

Na bykans 7 jaar moet ons as Raad, Bestuur en lede afskeid neem van Melissa. Die afgelope jare het Melissa meer as haar skoene volgestaan in die Holstein genootskap.

Sy het haar pligte met deeglikheid en toewyding uitgevoer. Waar en wanneer sy benodig was het sy nooit geskroom, om net daar te wees en te doen wat sy gevra is nie.

Ons gaan haar veral baie mis in die Wes Kaap, nie net op die plase maar met die skoue, kursusse en kuddekompetisies. Dit is darem ook nie die laaste sien van Melissa, sy het 'n pos aanvaar by Semex. Ons wens jou alle sukses en voorspoed toe Melissa met die nuwe fase van jou lewe wat jy en Stefan nou ingaan. Dit was net 'n voorreg en plesier om saam met jou te kon werk.

Van die/From the President


1

Die jaar het met 'n tempo afgeskop en S.A.Holstein kan met trots sê, dat ons die pas aangee t.o.v genetiese vooruitgang deur middel van genomiese ontledings van ons Holstein Ras.

Ons is regtig opgewonde en hoop dat ons lede hierdie geleentheid sal benut.

Laat ons u help om die genetiese potensiaal van u kudde verder te ontgin.


2


3


4


5


6


7

Raad Council

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7. Susan van Niekerk
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Personeel

Ellen Jacobs - Geboortes, kansellasies, semen invoere
Margret Moloabi - Klerk
Franscois Uys - Tegniese Adviseur

Raads besluite

– Maart 2017

Dit is al om bekend dat S A Holstein 'n minimale heffing plaas op alle ingevoerde semen, 'n groot gedeelte hiervan word dan ook juis gebruik vir die finansiering van die vry genomiese toetse wat die Holstein genootskap aan sy lede bied. Die Raad nooi dan ook alle semen maatskappye uit dat, indien julle opgewonde is oor nuwe kalwers van julle top bulle om ons in kennis te stel dat ons van die diere kan genomies toets. Ons as raad en bestuur is opgewonde oor die projek, kom ons almal werk saam en word saam opgewonde oor die ongelooflike moontlikhede wat hieruit kan spruit.

Ek is nie bewus van enige ander Genootskap wat die diens aan sy lede kosteloos offer nie, dit is slegs moontlik deur goeie samewerking tussen die Genootskap, semen maatskappye en progressiewe telers.

Verder het die raad ook besluit dat ons alle produksie data wat tans beskikbaar is van telers op Bestuurs programme soos Alpro en Afikim voortaan gaan aanvaar. Dit is van lede wat nie op melk -aantekening is nie. Ons is in die proses om 'n program te ontwikkel om die data direk van die lid af in te voer na ons stelsel. Ons beplan ook om in die toekoms meer bestuurs inligting van die lede op die manier te bekom.

Die volgende Nasionale Kampioenskappe sal in Oktober 2018 te Sandringham in die Wes Kaap plaas vind.

Klubs|Clubs Holstein

OOS-KAAP HOLSTEIN KLUB/EASTERN CAPE HOLSTEIN CLUB

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Fooistruktuur

SA Holstein

Fee structure

Vanaf **1 Maart 2017** is die fooistruktuur as volg en maandeliks betaalbaar.
The fee structure is as follows and monthly payable as from **1 March 2017.**

Aantal diere soos op SA Holstein stelsel **Amount of animals on SA Holstein database**	**Bedrag per dier per maand verskuldig (BTW uitgesluit)** **Amount payable per month per animal (VAT excluded)**
1 – 100	R 7.10
101 – 200	R 6.00
201 – 400	R 5.00
401 – 600	R 4.50
601 – 1000	R 3.50
1001 - 2000	R 3.20
2000 - 4000	R 3.10
4000 +	R 2.90

Dienste wat lede kan aanvra en ingesluit is in bogenoemde fooistruktuur is as volg:

1. ADMIN DIENSTE:

1.1 2 – 3 geslag en kompak stambome vir enige veilings.
1.2 2 – 3 geslag en kompak stambome vir privaat gebruik.
1.3 Aflaai van stambome vanaf webblad.
1.4 Oordragte vir lede wat diere aankoop.
1.5 Manlike en vroulike geboortes binne 120 dae vanaf geboorte hetsy per pos, faks, telefoniese of via web.

Services which members may request and which are included in the above mentioned fee structure are as follows:

1. ADMIN SERVICES:

1.1 2 - 3 generation pedigrees and compact pedigrees for any auctions.
1.2 2 – 3 generation pedigrees and compact pedigrees for private use.
1.3 Down loading of pedigrees from website.
1.4 Transfers for members who purchase animals.
1.5 Male and female births received within

1.6 Sessies.
1.7 Duplikaat sertifikate.
1.8 Herinstellings van diere en lidmaatskap.
1.9 Kansellasies van diere.
1.10 Lid se data in veilige bewaring op databasis.

2. TEGNIESE DIENSTE:

2.1 Klassifikasie of seleksie besoek 2 x per jaar.
2.2 Analise van klassifikasies.
2.3 Opgradering d.m.v. GBP.
2.4 Klassifikasies.
2.5 Bul Aanbevelings.
2.6 Inligtingskursus.
2.7 Stamboom evaluering.
2.8 Kleurmerke by veilings onder beskerming.

3. PUBLIKASIES EN DOKUMENTE:

3.1 Joernaal 1 x per jaar.
3.2 Kalender 1 x per jaar.
3.3 SA Holstein Nuusbrief 2 x per jaar.
3.4 Rasverbetering Beleidsdokument.
3.5 Klassifikasie en Beoordelingshandleiding.

VOORBEELD: *U het in totaal 420 lewendige geregistreerde diere op die SA Holstein stelsel. Dus 420 x R3.94 = R1 654.80 (BTW uitgesluit). Hierdie bedrag is maandeliks betaalbaar en fluktueer soos wat u diere afneem of toeneem. U kan al bogenoemde dienste aanvra soos gespesifiseer vir genoemde bedrag. ('n maksimum van 60 dae word toegelaat vir betaling waarna normale vorderings-prosedures ingestel word.)*

4. Die volgende is uitgesluit van bogenoemde Fooistruktuur (BTW UITGESLUIT)

4.1 Lidmaatskap:

4.1.1	Jaarlikse lidmaatskap fooie	R638.00
4.1.2	Nuwe lede intreefooi	R350.00
4.1.3	Voorvoegsel	R250.00
4.1.4	Junior Lede fooi	R 29.50

4.2 Veilings en Skoue:

4.2.1 Veilings onder die beskerming:

% kommissie	Op omset
1%	R750 00 en minder
0,8%	R751 000-1000 000
0,75%	R1000 001-15000 000
0,5%	R1500 001 en meer

4.2.2 Klub veilings onder die beskerming 0.5%
4.2.3 Jaarlikse Nasionale Holstein Veiling inskrywings per dier R126.50
4.2.4 Nasionale Skou inskrywings, per dier R 55.00
4.2.5 FUTURITY inskrywings per dier per jaar R55.00

4.3 Kursusse (per persoon):

4.3.1	Klassifikasie kursus	R209.00
4.3.2	Inleidings Beoordelaarskursus	R341.00
4.3.3	Junior Beoordelaarskursus	R440.00

120 days of birth either via post, fax, telephonically or via the web.
1.6 Cessions.
1.7 Duplicate certificates.
1.8 Re-instatements of animals and membership.
1.9 Cancellations of animals.
1.10 Member data in secure database.

2. TECHNICAL SERVICES:

2.1 Classification or selection visit 2 x per year.
2.2 Analysis of classification.
2.3 Up-grading by means of GBP.
2.4 Classifications.
2.5 Bull recommendations.
2.6 Information course.
2.7 Pedigree evaluations.
2.8 Colour markings at sales under the auspices.

3. PUBLICATIONS AND DOCUMENTS:

3.1 Journal 1 x per year.
3.2 Calendar 1 x per year.
3.3 SA Holstein News Letter 2 x per year.
3.4 Breed Improvement Policy document.
3.5 Classification and Judging Manual.

EXAMPLE: *You have 420 live registered animals on the SA Holstein database. Therefore 420 x R3.94 = R1 654,80 (VAT excluded). This amount is payable monthly and fluctuates as your animals increase or decrease. You may request all the above services for the mentioned cost. (A maximum of 60 days are allowed for payment, after which the usual debt collection procedures will be followed.)*

4. The following services are NOT included in the above mentioned fee structure (VAT EXCLUDED)

4.1 Membership:

4.1.1	Annual membership fees	R638.00
4.1.2	New member application fee	R350.00
4.1.3	Prefix	R250.00
4.1.4	Junior Membership fee	R 29.50

4.2 Auctions and Shows:

4.2.1 Auctions under the auspices:

% commission	On turnover
1%	R750 00 and less
0,8%	R751 000-1000 000
0,75%	R1000 001-15000 000
0,5%	R1500 001 and more

4.2.2 Club sales under the auspices 0.5%
4.2.3 Annual National Holstein Sale-entries per animal R126.50
4.2.4 National show entries per animal R55.00
4.2.5 FUTURITY entries per animal per year R55.00

4.3.4 Finale Junior Beoordelaars eksamen R440.00

4.4 Invoer van semen/Embrio/Diere:

4.4.1 Hanteringsfooi per dosis, deur agent R1.07

4.5 Ander:

4.5.1 Spesiale besoek nie area gebonde R462 + R2.00/km
4.5.2 Geboortekennisgewingboek R65.00
4.5.3 DNA toetsing R150.00
4.5.4 Bloedtipering R180.00

4.6 EBV Koei profiele vir lede:

4.6.1 Per profiel R0.00

4.7 Meer as twee besoeke benodig per jaar per lid:

4.7.1 Kuddebesoek R192.50
4.7.2 Per dier geklassifiseer R27.50

4.8 Teken van diere vir registrasie deur klassifiseerders:

4.8.1 Per dier R5.50

SA Holstein JOERNAAL **BTW UITGESLUIT**

Omslag	**Telers**	**Kommersieel**
Voorblad	R3 000.00	R5 000.00
Binne voor	R4 500.00	
Binne agter	R4 500.00	
Buite agter	R4 500.00	
Binne (Volkleur)		
Volblad	R1 900.00	R3 500.00
Halfblad	R1 750.00	R2 500.00
Middelblad	R4 000.00	R6 500.00
Kwartblad	R 950.00	R1 700.00

4.3 Courses (per person):

4.3.1 Classification course R209.00
4.3.2 Introduction Judges' course R341.00
4.3.3 Junior Judges' course R440.00
4.3.4 Final Junior Judges' examination R440.00

4.4 Importation of semen/Embryos/Animals:

4.4.1 Handling fee per dose, by agent R1.07

4.5 Other:

4.5.1 Special visit (not area bound) R462 + R1.65/km
4.5.2 Birth Notification book R 65.00
4.5.3 DNA testing R150.00
4.5.4 Blood typing R180.00

4.6 EBV Cow profiles for members:

4.6.1 Per profile R0.00

4.7 More than two visits per year per member:

4.7.1 Herd visit R192.50
4.7.2 Per animal classified R 27.50

4.8 Colour markings drawn by classifiers for registration:

4.8.1 Per animal R5.50

SA Holstein JOURNAL **VAT EXCLUDED**

Cover	**Members**	**Commercial**
Front cover	R3 000.00	R5 000.00
Inside front	R4 500.00	
Inside back	R4 500.00	
Outside back	R4 500.00	
Inside (full colour)		
Full page	R1 900.00	R3 500.00
Half page	R1 750.00	R2 500.00
Centre spread	R4 000.00	R6 500.00
Quarter page	R 950.00	R1 700.00

INDIEN ENIGE ONDUIDELIKHEID SKAKEL/ IF ANY QUESTIONS, PLEASE CONTACT:

Susan van Niekerk by 051 4479123 (082 570 1104)

Belangrike DATUMS

Mei	1 - 7	Bloemskou - Kantoor/Office: 051 448 9894
	16-19	Nampo Oesdag, Bothaville
	26-31	Royal Show - Lara Bezuidenhout (033 345 6274)
Junie	1-4	Royal Show - Lara Bezuidenhout (033 345 6274)
Augustus	16	ECHC AGM + Holstein Information day - Mario Marais (082 854 5110)

One of the breed's best for any index

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1HO11670
GATEDANCER

Alta1stclass x Supersire x Aaron-Red

+838 ICCS | +784 LNMS | +2631 TPI®

An all-round sire positively impacting farm profits through production, longevity, calving ease and sire fertility.

All-round Health & Fertility Favorites!

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1HO11056 **TROY**

Mogul x Freddie x Mascol

+903 ICCS | +842 LNMS | +2438 TPI®

Health: +8.0 PL, 5.7% SCE, 4.2% DCE, 103 MTR

Fertility: +3.8 DPR, +1.9 HCR, +4.6 CCR, +3.0 SCR, 103 PregCheck™

[illegible]

1HO11653 **SHOCKTOP**

Troy x Numero Uno x Super

+890 ICCS | +672 LNMS | +2520 TPI®

Health: 6.8% SCE, 4.8% DCE, +6.8 PL, 102 SCK

Fertility: +1.4 DPR, +1.5 HCR, +2.9 CCR, +1.2 SCR

[illegible]

1HO11917 **BLACKJACK**

Supershot x Numero Uno x Planet

+864 ICCS | +811 LNMS | +2592 TPI®

Health: +8.5 PL, 4.9% DCE, 7.3% SCE, 103 SCK

Fertility: +2.2 DPR, +2.5 HCR, +3.8 CCR, +2.8 SCR, 104 PregCheck™

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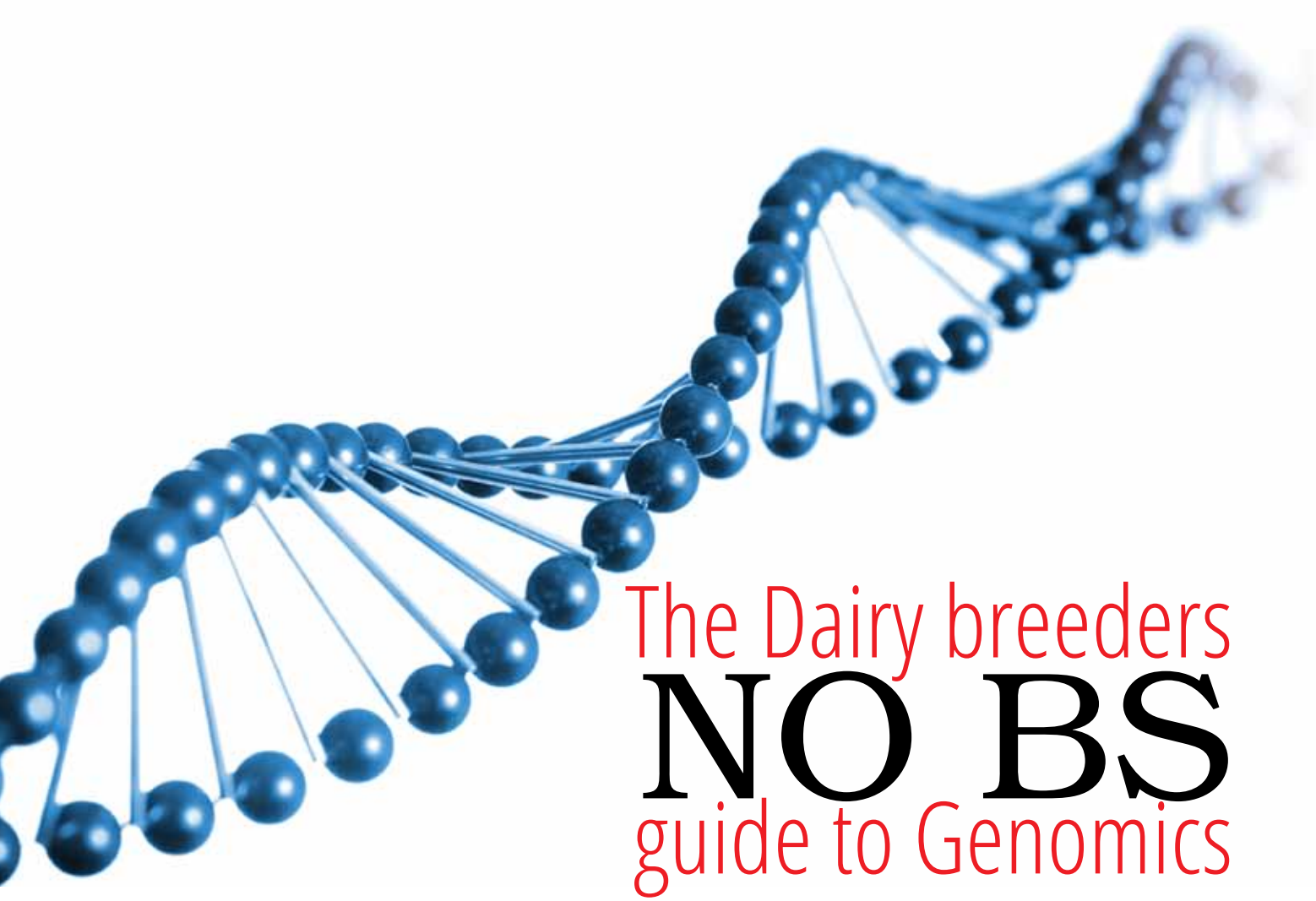


The Dairy breeders NO BS guide to Genomics

OVERVIEW

KEEP YOUR WEATHER EYE ON GENOMICS!

Everybody talks about the weather. Nobody does anything about it! Mark Twain Of course everybody talks about the weather! We're farmers. The weather has a huge impact on our day-to-day operations. The surprises of Mother Nature from rain to frost, drought to flood can play havoc with profit margins. Generations of successful farmers talk about the weather.

They also talk about genetics. Dairy breeders have always gathered the best information in order to make the best cattle breeding decisions. Good breeders use cow sense, milk-yield data and conformation weaknesses to target improvements. The genetics industry has invested in research, collaboration and data collection to move genetics forward.

In the weather industry, meteorologists make use of satellites, weather balloons, super computers, Doppler radar and a complex communications network to produce reasonably accurate weather forecasts. Today genetic industry leaders are excited about their new super-tool - Genomics.

Follow the best forecast. If you're a pilot, your life could depend on accurate and timely weather information. Successful cattle breeding depends on accurate and timely genetic information. We have all waited impatiently for the "proof" that our genetic decisions were the right ones. Today the industry is dramatically reducing the waiting time with this new improvement tool – Genomics.

The major breakthrough with Genomic Selection is that with the relatively easy and inexpensive testing, large amounts of genetic information is accessible and it is possible to see the future of a young animal without the long wait which was synonymous with proving bulls previously.

Risk reduction comes first. A major part of modern weather forecasting is the benefits derived from being able to send out severe weather alerts and advisories. With the right information at the right time, the hazards can be greatly reduced.

Genomic selection can be used to avoid the hazards relating to health, high somatic cell scores and using low merit sires. Marker-assisted selection will have a positive effect on the dairy industry, especially when used to select for auxiliary traits that improve animal health and performance. Continually adding markers into selection should greatly improve the current selection of seedstock while reducing the costs of generating progeny test data.

In the future Breed associations and individual producers that implement a comprehensive

approach to selection will not only be able to improve production, but also animal health, reproduction and well-being in an intensive production setting.

Is it a finger in the wind or an exact science? It is impossible, today, to predict the weather with 100% accuracy even with all the scientific improvements. Likewise genomic selection is not an exact science but it is a powerful new tool for predicting results!

Genomics is all the talk because it really works! The early adopters from 2009 are reaping the benefits right now! All the genetics companies can provide you charts and stats answering questions regarding stability. Research is intensive and ongoing.

In a results-oriented industry these opportunities cannot be ignored:

- Improved accuracy over previous methods
- Constantly updated genetic information for informed decision making
- Younger animals used as parents, therefore reduced generation intervals

The race is on. Whether you are racing against the weather to get a crop in or racing to meet your genetic goals, accurate information is important to your success. As noted by Larry Schaeffer C.G.I.L. "The dairy cattle industries around the world have grabbed hold of the new technology and have been racing to find better ways to evaluate dairy sires and cows." With Genomics not only is everybody talking about it, but unlike the weather, they are actually doing something about it. He adds, "The potential advantages of a genome-wide selection scheme are too great to ignore."

Using the best information produces the best results! Go Genomics!

THE BASICS

The genetic makeup of every species (animal or plant) is determined at conception: the point where both the parents' gametes come together to form the new identity. Each parent contributes equally to the makeup of the offspring. The genetic code is therefore a union of the parents.

Animal breeders have for centuries selected for the next generation by building on the good characteristics of the parents and attempting, all the while, to avoid transmission of any limiting factors that the parents may possess.

The code for the genetic makeup of any animal is carried on the genes which occur in pairs with one being transmitted to the progeny.

For the time period 1955 to 2006, dairy cattle breeders participated in sire proving programs, by using young sires that AI organizations made available to them. AI organizations provided rewards or incentives for participation in the program. On average, breeders used between 20 to 30 percent unproven sires. Of course, the end result was females milk in the herd that were outstanding , were good average cows or they could be females that were a disappointment and were often culled early in their first lactation after they had a few milk recording test days, had auxiliary trait information recorded and were classified. The disappointment factor could not be avoided and it often prompted breeders to question why not just pay the money and use for proven bulls. Of course, that would mean that not enough top proven bulls would be available in the future.

WHAT DOES THIS MEAN FOR SEMEN COMPANIES?

With coming of age of genomic testing, a great tool was available to eliminate the use of unproven bulls whose genomic values did not match their parent averages. This allowed AI organizations

- to be more strategic about how many bulls to sample,
- where to source the sires of the young bulls,
- which traits to put emphasis on,
- how to minimize the narrowing of the genetic base,
- how to obtain more accuracy for proven bulls genetic evaluations,
- Which cow families to select unproven bulls from and
- .... the list goes on.

Sexed semen has not become a widely used tool mainly because, with the sexing of semen, comes the lowering of conception rates. Genomics, on the other hand, does not have such a downside. At this point in time AI organizations are selling up to almost half of their semen from genomically tested bulls. This number is likely to increase as people interested in knowing more details can find that information by requesting it from their AI suppliers or by reading updates in dairy farm publications.

HOW HAVE BREEDERS ACCEPTED GENOMICS?

Many knowledgeable breeders, researchers and AI organization have described the advancement being made by the use of genomic testing is "phenomenal".

Over the past decade researchers have worked extensively to determine how the genetic code (DNA) relates to actual on-farm performance and results. Service has been available for four years (2008) whereby samples can be submitted and predictions can be obtained on the genetic makeup of an animal.

For unproven bulls and heifers the accuracy of these predictions is in most cases twice as accurate as the average of both parents' genetic evaluations. The uptake of this service has been popular. Over hundred of thousands of animals have been tested.

Dairy cattle breeders have been very fast to adopt this new technology and it is also occurring in other livestock species.

EVALUATIONS

Genomic Testing Service in North America started in 2009. Specifically, seven AI companies, two in Canada and Five in the US, joined with the USDA , the University of Albert, the University of Missouri and Illumina to correlate SNP locations to phenotypic data. In Canada, the University of Guelph and the Canadian Dairy Network also joined in doing the basic research and analysis.

In exchange, for their financial participating and providing of both DNA data and semen, the AI organization were given a five year exclusivity on the use of genomic evaluations for young bulls.

This was followed by Holstein USA and Holstein Canada providing service to the owners of females. For bulls the service was limited to the AI organizations that signed on and provided resources to do the research. Other breed associations are now using the service for females.

The methodology is being refined on a continual basis. Globally genomics testing is available in United Kingdom, Germany, the Netherlands etc.

Key differences of Canadian Evaluations

1. Canadian GPA (genomic evaluations) of young animals have essentially the same scale as proven bulls. This prevents over- evaluation of young unproven bulls.
2. Canadian published reliabilities tend to have slightly higher accuracy than the USA, with the exception of fat yield. (see Table 1)
3. Canada uses more conservative methods for estimating reliabilities than the USA. Published reliabilities for the same traits are higher in the US than in Canada because US methods assume that DNA profiles can account for 90% of the total genetic variation among animals, while Canada uses a more conservative value of 80%.

Table 1: Accuracy (R-square) of genomic evaluations in recent Canada and US validation studies

Trait	CDN	USDA
LPI/NMS	0.28	
Milk	0.48	0.43
Fat	0.44	0.47
Protein	0.45	0.40
SCS	0.36	0.31
Conf/PTAT	0.35	0.31
HL/FL	0.15	
DF/DPR	0.12	

Table 2. Published reliabilities in Canada versus the US (February 2010)

Animal Group	USDA (Net Merit) GPA/EBV	CDN (LPI) GPA/GEBV
CAN Young Bull	66	63
USA Young Bull	66	61
CAN Heifer	66	64
USA Heifer	67	62
CAN Cow	69	67
USA Cow	70	65
CAN Proven Bull	80	89
USA Proven Bul	82	79

In Canada, the effects of markers are recalculated with every official evaluation, and the genomic evaluations of young animals are calculated monthly. In practice, GPA or GEBV as well as DGV are made available for all selected traits. As is the policy in Canada, once an animal is performance tested or the DNA profile is know, the results are universally available.

WHY USE GENOMICS?

REASONS:

- To increase the rate of genetic gain
- To use younger animals as parents, thereby reducing the generation intervals
- To have increased accuracy for decision making
- To control inbreeding

• To make genetic progress in fertility
• To make genetic progress in health
• To make more money

TO INCREASE THE RATE OF GENETIC GAIN:

This

• The pre-selection of young bulls based on their DNA profile

Plus

• The use of the best young bulls to produce part of the next generation of bulls

Potential Gain

Increased genetic progress between 60% to 80%

Bottom Line

MORE MONEY FOR PRODUCERS

TO CONTROL INBREEDING:

Positive Potential

1. Genomics offers new approaches to study and monitor inbreeding
2. Genomics decreases reliance on pedigree information for selection.
3. Genomics provides the opportunity to select from new lines or cow families not used before.

Negative Potential

• Shorter generation interval because of use of unproven bulls as sires.

Plus

• If every AI organization uses only bulls from these families

Results

Genetic variability decreases

Potential Solution

AI companies are offering incentives to breeders who provide young calves that have both high genomic values and a different pedigree from that of currently available top young bulls.

Driven by the need to get more information, countries around the world that formerly guarded their animals' genetic qualities as a competitive advantage are coming together in the global marketplace to get the critical mass for gathering information for genomic research.

The benefit of this to dairy breeding is that it could result in identification of families that will prevent the narrowing of the gene pool.

TO MAKE GENETIC PROGRESS FOR MORE TRAITS

• Fertility
• Health
• Longevity

In the last 20 years, there has been considerable improvement for production and type. There was no progress for fertility and health and, in some other countries there was actually a decline for these two traits.

Genomic selection provides the very distinct possibility of counteracting the negative effect of selection for these traits and actually making progress for fertility and health.

TO MAKE MORE MONEY

Some AI companies are providing data that shows how much more money offspring from one bull might earn than offspring from an inferior one based on its genetics Marker-assisted technology is already starting to save dairy farmers money. Brad Sayles, vice president for global marketing at Semex, says "Semen from unproven but genomically validated bulls sells for anywhere from $15 to $30 less per dose in Canada than doses of proven bulls' semen. As it takes an average of four doses to impregnate a cow, this means that for each 100 cows, Canadian farmers can now save between $6000 and $12,000 yearly."

Good genomic profiles mean more profit. When pedigrees were all that AI companies had to go on, they paid $3000 to $4000 to buy a promising bull. Now it is easier to separate future winners from losers on the basis of a genetic profile. The price has gone up to somewhere between $6000 and $14,000.

WHAT CAN YOU EXPECT?

Improvements will continue to be made to the way genomic proofs are estimated

- Numerous animals will be added to the reference population
- Accuracy will continue to rise
- Rate of change will narrow
- To focus SNP testing on the ones that will be of greatest interest to cattle breeders.
- The goal is to find a heap test. A price that is low enough to encourage every cattle farm in North America to seek a genomics profile for every animal.

Predictions for the Genomic group far exceed the progress of daughter- proven groups.

EXPECT EXTREME GENETIC PROGRESS in a manner unheard of since frozen semen made such an impact in the 40s and 50s. It is an exciting time to be in the cattle breeding business!

WHO USES GENOMICS?

It is exciting to see the rapid adoption by dairy

farmers of molecular profiling. From the outset, it was recognized that along with the advantages would come new questions that would have to be addressed. However, the dairy industry from breed associations to AI companies are rapidly assimilating cattle genomics into their operations for clients. The overwhelming response has boggled the minds of forecasters who predicted that uptake would range between 15% and 20% of clients. Reported use of genomic testing has been reported to date at a rate of 40% to 45% of sales for sires with no milking daughters. It looks like cattle breeders are putting confidence in the years of information they have been collecting.

Previously, cattle breeders accepted the expensive and slow moving five to six year process that could cost up to $50,000 per bull. Even harder was the fact that, with all the waiting, only one bull in ten came through the process and became a proven stud.

Every stud can tell you the reduced numbers they are sending through progeny testing and they are gleefully reporting that the number being identified as "Super Stud" has grown to one bull in five!

HOW TO USE GENOMICS

Dairy cattle owners make daily breeding decisions

- To breed or not breed this female?
- Which bull to breed to which female?
- Is this female to be an embryo recipient?
- Will this female be culled from the herd?

Genomics is a great example of the volume of information provided to breeders so they can make informed breeding decisions. Although getting more information is good, managing all the information is another matter. In the future, AI companies will find their business increasingly focussed on genetic consultation with their customers regarding breeding strategies.

Two Main Approaches

1. The pre-selection of young bulls based on their DNA profile

2. The use of the best young bulls to produce part of the next generation of bulls

THE BOTTOM LINE

From Industry Foresight: Data, and DNA, collected and stored by (A.I.) companies and breed associations for the purpose of future research was available. Industry (AI and breeds) and government worked together to correlate DNA analysis of individual animals to actual known population based genetic results. In North American major investments were made by seven AI organizations and exclusive five year nonrenewable agreements were signed for the testing of males. Testing of females was organized through breed associations and offered to dairy cattle owners.

A Major Breakthrough: 54,000 DNA marker tests can be done simultaneously. It is fast. It is cheap. With the mapping of the bovine genome the opportunity existed to correlate the results of DNA analysis with what dairy farmers had documented in the way of animal performance at the farm level.

It Works: The indexes from older progeny proven animals were tested by taking young unproven bulls, analyzing their DNA and then using their progeny performance and comparing their results to the older base group. It worked. The results were the same!

It's Fast: The previously long wait for proven results has been dramatically reduced through rapid turnover of the generation interval. Decisions can now be made on which young bulls not to progeny prove. Young non-progeny tested sires are being used as the sires of sons.

Incredible Response: Nearly every young bull entering a North America A.I. centre is now tested and the vast majority of potential bull dams are now tested as well. Since 2007 15,000 North American dairy bulls have been genotyped.

Follow the Money: There is more focussed bull selection and shortened generation intervals. This means tremendous savings on money previously spent on selection, bull housing and related input costs. These dollars can be applied to areas which used to be further down the priority list: calf health; reproduction; resistance to disease.

The Research Goes On: The potential is enormous. An expanded list of traits can be tested for. Genomic technologies will bring about new breeding tools that were previously unimaginable.

Not What You Know but How You Use It: Genomic evaluation has not realized its full potential. However, as with any new business tool, the information on its own won`t revolutionize your breeding results. How you use it will. The opportunity is there to use animals of known high genomic merit to improve bottom-line revenue. It could be revenue from within the animals in the herd to produce milk for human consumption or the focus could be embryos and/or progeny for sale in a fast developing trade in elite genomically tested animals.

BOTTOM LINE: Set your goals. The future is now!

Holstein challenges

Herman Duvenage

Want to start where thy stopped.

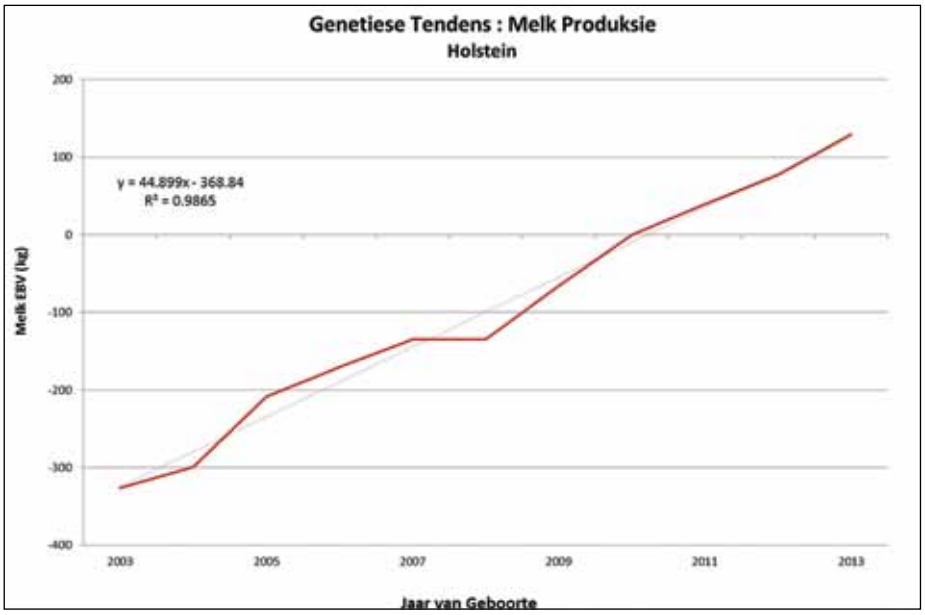
SET YOUR GOALS THE FUTURE IS NOW.

Die volgende paar grafieke beeld duidelik die effek van die gebruik van Genomika. Van 2008 / 2009 is alle bulle wat die land ingevoer word slegs op Genomiese uitslae en of so called Proofs goed gekeur en of afgekeur vir toelating in Suid-Afrika.

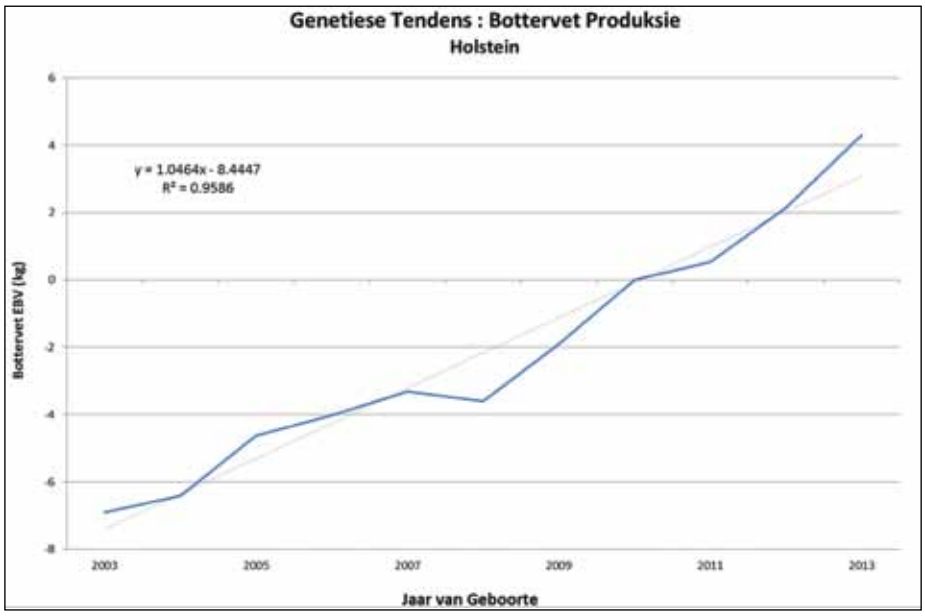
Ons as telers en Genootskap moet duidelik die waarde van die groot invoerlande (Semen Maatskappye) sien en besef. Hulle speel 'n ontsaglike groot rol in ons as telers se sukses of nie. Ek kan met eerlikheid sê in 90% van alle gevalle as 'n bul afgekeur word was daar openlike en eerlike gesprek oor die redes, en word goed aanvaar vir die redes aangevoer vir die besluit. Dit is verseker nie net 'n eensydige besluit van die Genootskap nie.

Voor 2008 / 2009 (Begin van genomika) was daar nooit geselekteer vir Productive Life, Herd Life, Fertility en SSC en nog baie eienskappe wat vandag gebruik word met hoe intensiteit. Die vraag is wie het ons attent daarop gemaak, en ons teelwaardes of die leidende invoer maatskappye. Ons het almal altyd gepraat van die tekortkominge van die Holstein, dit nooit weg gesteek nie. Met behulp van die Invoer maatskappye is die tekortkominge daadwerklik aangespreek, met duidelike resultate. Gepaard gaande daarmee het sexed semen ook die lug gesien in 2012 wat 'n gesprek vir n ander dag is met die effek daarvan.

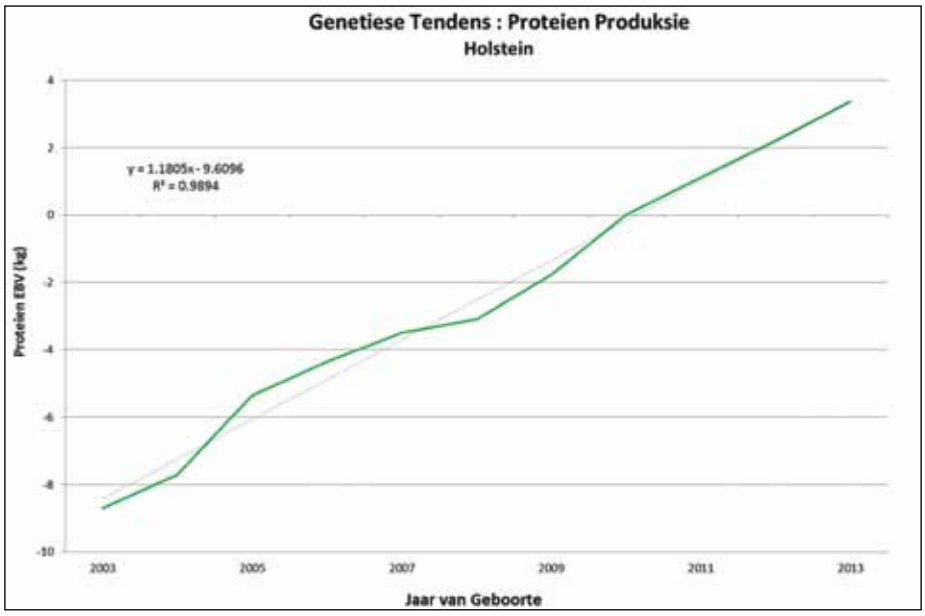
S A Holstein se Raad en Bestuur het reeds in laat 2015 besluit dat die genomiese toetsing van vroulike diere aan die lede beskikbaar moet wees. Dit het dan ook daartoe gelei dat alle lede soos julle reeds weet vry toetsing kan laat doen deur die Genootskap, net om julle verder te bemagtig en bo gemiddelde of uitstaande diere vroeg te identifiseer, en tred te hou met die vinnige vooruitgang in die nuwe Genetiese era waarin ons is.



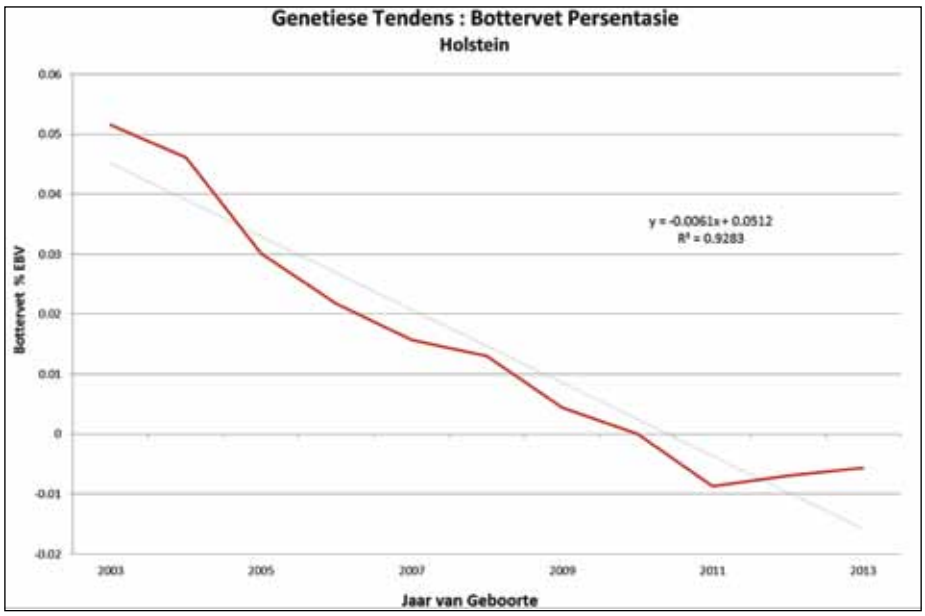
Melk produksie baie goeie positiewe tendens van af 2009 teenoor die vorige 5 jaar voor Genomika. Net vir interessantheid die Produksie verskil tussen Geregistreerde Holstein en Kommersieele Holstein is net oor die 2000 kg.



Bottervet Kg: toon dieselfde tendens in toename.

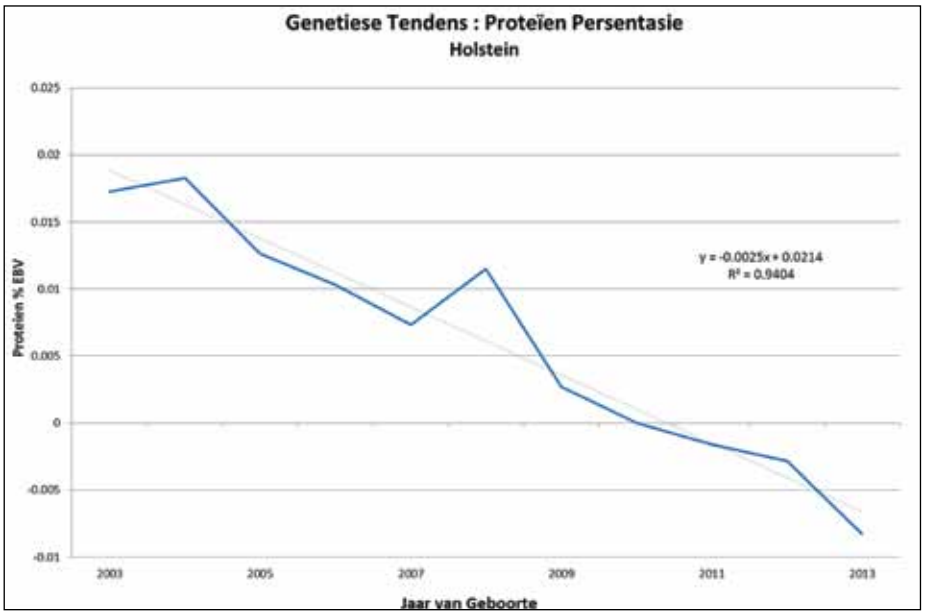


Protein Kg: baie dieselfde as melk produksie se pos tendens.

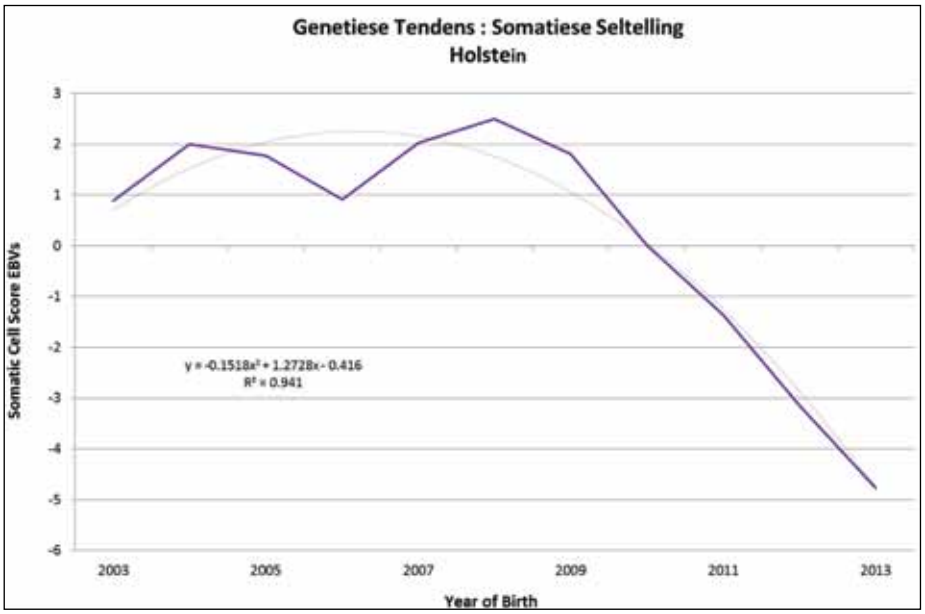


Bottervet %: Dit is een van die belangrikste, is dit nie juis die Holstein se volgende of huidige grootste Challenge wat ons in die gesig staar. As ons na die prys struktuur van die groot melk kopers word al hoe meer, en meer klem gelê op Bottervet juis vir die vervaardiging van produkte vir toegevoegde waarde in hulle bedryf. Dit gaan al hoe meer en meer druk plaas op die Holstein teler.

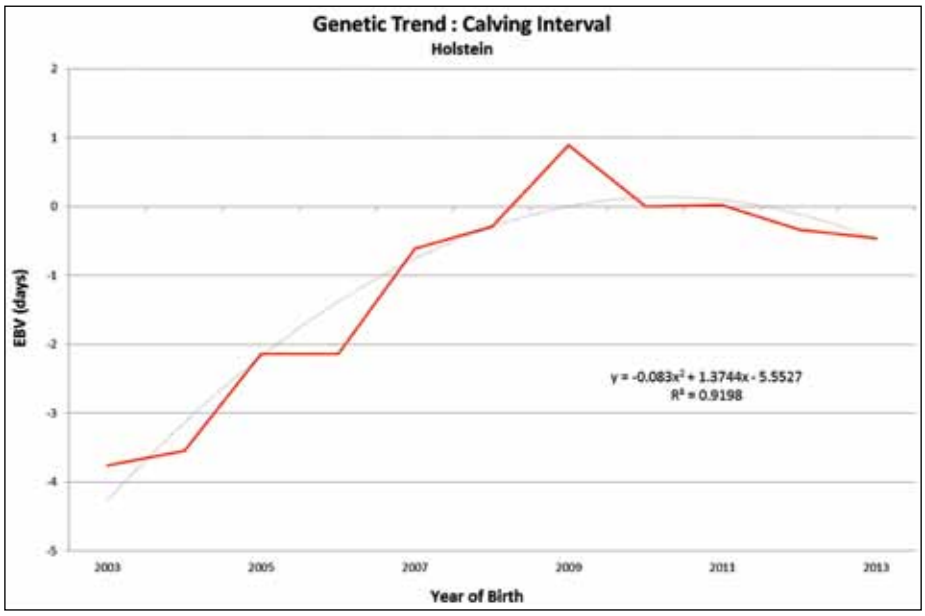
Die goeie nuus is as ons na die grafiek kyk dat dit wêreld wyd reeds die tekortkoming raakgesien het. Kyk na die skerp opwaartse neiging vanaf 2011. Daar is vandag menige bulle in die mark beskikbaar wat positief is op melk +- 1000 lbs positief op Productive Life en ook op Bottervet %. Die ras beskik oor die genetiese materiaal om dit vir ons moontlik te maak. Bottervet % en positiewe melk produksie is negatief gekorreleer, maar inteendeel kan ook bewys word soos ons kan sien. Dit als te danke aan genomika en die gebruik van nuwe tegnologie en wetenskap. Moet ons nie net 'n bietjie meer klem lê op Bottervet % in ons toekomstige seleksie? Kyk ons ooit na Bottervet % in ons seleksie kriteria?



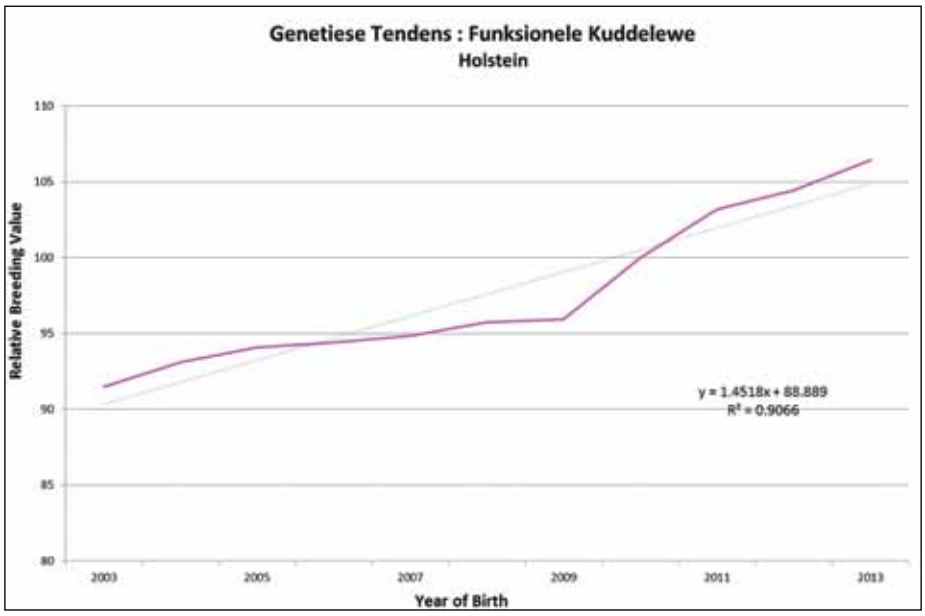
Protein %: nog nie teveel om oor huistoe te skryf, sal interessant wees om te sien wat gebeur met protein oor die volgende termyn.



Somatiese seltelling: dit is 'n ongelooflike daling in SST. Koei met hoër produksie en 'n laer SST. Beter gehalte melk meer ekonomies.



Vrugbaarheid: Soos gesien kan word het ons verseker op n draaipunt gekom wat 'n negatiewe aspek van die ras was.



Funksionele kudde lewe: baie skerp styging in kudde lewe, koei wat langer hou met meer melk.

Opsomming

Ons het dit reg gekry om in die laaste 8 jaar koeie te teel wat meer melk produseer, hoër Bv % in verhouding, met anderwoorde 'n meer effektiewe koei met 'n groot ekonomiese impak. Daarby 'n dramatiese verbetering in SST met vrugbaarder koei wat langer lewe en produseer.

As ons 10 jaar gelede vir mekaar gesê het dit is my doelwitte om dit in 8 jaar te bemag sou ons sekerlik vir mekaar gelag het. Wel dit het gebeur, dankie aan almal van wie ons so afhanklik is vir die insette en bydrae om dit te kon bemag.

Behalwe vir Bv% wat gaan die Holstein se volgende groot Challenge wees? Wat dit ookal mag wees ek is oortuig dat ons dit sal oorkom met groot sukses.

Al wat ek nou wil sê, gebruik julle kuddeprofiele wat beskikbaar is, gebruik die geleentheid om van julle diere genomies te laat toets, gebruik die genootskap om jou te help om te bepaal waar jy in die wedloop van vooruitgang staan. Ek is seker daar bestaan geen twyfel om die voordeel te sien om 'n Geregistreerde Holstein teler te wees.

Holsteins neem die voortou en streef om voor te bly.

Trait definitions

Trait	Units	Descriptions	Breeds available
Net Merit (NM$)	$	Net Merit $ index expresses the expected lifetime profit of a female compared to the breed base. NM$ utilizes economically relevant traits related to yield, health, longevity and calving ease. Specific traits used in the index include fat and protein yield (therefore also milk), productive life, daughter pregnancy rate, somatic cell score, udder composite, feet & leg composite, body size, and calving ability (including stillbirth information).	Holstein, Jersey, Brown Swiss.
Cheese Merit (CM$)	$	Cheese Merit $ index combines the same traits as NM$ with greater emphasis on protein and fat %, making this information particularly useful for producers selling their milk in the cheese market.	Holstein, Jersey, Brown Swiss.
Fluid Merit (FM$)	$	Fluid Merit $ combines the same traits as NM$ with more emphasis on milk yield, making this information particularly useful for producers selling their milk solely on volume.	Holstein, Jersey, Brown Swiss.
Grazing Merit (GM$)	$	Grazing Merit $ combines the same traits as NM$ with more emphasis on fertility, making this information particularly useful for producers with pasture systems and seasonal calving requirements.	Holstein, Jersey, Brown Swiss.
Total Performance Index (TPI)	Index points	TPI is the official selection index of the Holstein breed and ranks animals on the basis of combined genetic merit for productivity, efficiency, and conformation.	Holstein
Milk Yield (Milk)	lbs	Describes genetic differences in total pounds of milk produced during a 305-day lactation.	Holstein, Jersey, Brown Swiss.
Fat (Fat)	lbs	Describes the genetic differences in the quantity of milkfat produced during a 305-day lactation.	Holstein, Jersey, Brown Swiss.
Protein (Prot)	lbs	Describes the genetic differences in the quantity of protein produced during a 305-day lactation.	Holstein, Jersey, Brown Swiss.
Fat (Fat %)	percent	Describes the genetic differences in the % of milkfat in milk.	Holstein, Jersey, Brown Swiss.
Protein (Prot %)	percent	Describes the genetic differences in the % of protein in milk.	Holstein, Jersey, Brown Swiss.
Holstein Feed Efficiency Index (FE)		Genetic index measuring differences in feed efficiency determined by dollar value of milk produced, feed costs of extra milk, and extra maintenance costs due to body size.	Holstein
Somatic Cell Score (SCS)	Score	GPTAs for somatic cell score are indirect predictors of susceptibility to mastitis. Lower values indicate a more favorable somatic cell value throughout the duration of a cow's lactation compared to the breed base.	Holstein, Jersey, Brown Swiss.
Daughter Pregnancy Rate (DPR)	percent	Measures the animal's genetic ability for better reproductive efficiency. DPR is expressed as the expected percent difference, compared to breed average, that a nonpregnant cow will become pregnant during each 21-day estrous cycles. An increase of 1.0 percent in DPR equals an approximate decrease of four days open.	Holstein, Jersey, Brown Swiss.
Heifer Conception Rate (HCR)	percent	A virgin heifer's ability to conceive, defined as the percentage of inseminated heifers that become pregnant at each service; an HCR of 1 implies that daughters of this animal would be 1% more likely to become pregnant as a heifer than daughters of an animal with an HCR value of 0.	Holstein, Jersey, Brown Swiss.
Cow Conception Rate (CCR)	percent	A lactating cow's ability to conceive, defined as the percentage of inseminated cows that become pregnant at each service; a CCR of 1 implies that daughters of this animal are 1% more likely to become pregnant while lactating than daughters of an animal with an evaluation of 0.	Holstein, Jersey, Brown Swiss.
Holstein Fertility Index (FI)		Genetic index incorporating the following fertility traits: heifer conception rate, cow conception rate, and daughter pregnancy rate.	Holstein
Productive Life (PL)	months	Evaluates a cow's genetic ability to stay in the herd and accounts for characteristics that make a cow more sustainable for the dairy operation. It is expressed as the expected months in milk that a cow will have relative to the breed average.	Holstein, Jersey, Brown Swiss.

Livability (LIV)	percent	Evaluates a cow's genetic ability to stay alive on the farm. It is expressed as the percent of progeny that will stay alive relative to the breed average. This is different from the other longevity trait (PL) that focuses on removal from the herd due to mortality and culling. Higher values for livability are more desirable.	Holstein, Jersey, Brown Swiss.
Sire Calving Ease (SCE)	percent	Measures the genetic ability of a calf to be born easily and is expressed as a percentage of difficult births in among first-calf heifer calvings. Lower numbers reflect easier calving.	Holstein, Brown Swiss.
Daughter Calving Ease (DCE)	percent	Measures the genetic ability of a female to calve easily and is expressed as percent difficult births for first-calf heifers. Lower numbers reflect easier calving.	Holstein, Brown Swiss.
Sire Still Birth (SSB)	percent	Measures the genetic tendency of calves from a particular sire to be stillborn or die within 48 hours. Lower numbers are desired.	Holstein.
Daughter Still Birth (DSB)	percent	Measures the genetic ability of a cow to produce live calves.	Holstein.
Calving Ability (CA$)	$	Genetic index that measures the ability of a calf to be born easily and alive. Specific traits used in the CA$ index include sire calving ease, daughter calving ease, sire still birth and daughter still birth.	Holstein.
Type Traits - Overall and Composite			
Final Score Type (Type FS)	points	Measures overall genetic conformation scores by incorporating the following type traits: udder, feet and legs, front end capacity, dairy strength and rump.	Holstein, Jersey, Brown Swiss.
Udder Composite (UDC)	points	Genetic index measuring expected differences in overall udder conformation by incorporating several linear traits. Higher values indicate increased longevity. For every 1.0 increase in UDC, a 18-day increase in productive life is expected.	Holstein, Jersey, Brown Swiss.
Feet & Legs Composite (FLC)	points	Genetic index measuring expected differences in overall feet and legs by incorporating values measuring mobility, foot angle and the rear leg tracking, set and placement. For every 1.0 increase in FLC, a ~10-day increase in productive life is expected.	Holstein, Brown Swiss.
Body Size Composite (BDC)	points	Genetic index measuring expected differences in overall size and capacity of an animal by incorporating stature, strength, body depth and width of rump. Higher values indicate a larger overall animal, thus may indicate larger feed maintenance needs. Desirable size varies based on herd goals, preferences, and housing environment. For every 1.0 increase in BDC, a 24-pounds increase in weight is expected.	Holstein.
Type Traits[1]- STAs	Direction (- to +)		
Stature (ST)	Short to Tall	Genetic differences in the height measured at the hips. A higher value indicates a taller animals.	Holstein, Jersey, Brown Swiss
Strength (SG)	Frail to Strong	Genetic differences in width of chest, showing capacity of vital organs. A higher value indicates a stronger animal through the width of chest.	Holstein, Jersey, Brown Swiss
Body Depth (BD)	Shallow to deep	Genetic differences in the depth of rib. A higher value indicates greater depth of rib.	Holstein
Dairy Form (DF)	Tight to Open	Genetic differences in the angle and openness of the ribs and overall angularity (or coarseness) of an animal. A higher value indicates more openness of rib.	Holstein, Jersey, Brown Swiss
Rump Angle (RA)	High pins to sloped (low pins)	Genetic differences in the slope from hips to pins. A value nearer to zero is more desirable.	Holstein, Jersey, Brown Swiss
Rump - Thurl Width (RW)	Narrow to Wide	Genetic differences in the width between the pins. A higher value indicates a wider animal between the pins.	Holstein, Jersey, Brown Swiss
Rear Legs Side View (LS)	Posty to Sickle	Genetic differences in the angle of the hock as viewed from the side. A value nearer to zero is more desirable.	Holstein, Jersey, Brown Swiss
Rear Legs Rear View (LR)	Hock-in to Straight	Genetic differences in width of stance between the rear legs with little or no hock-in as viewed from behind. A higher value indicates the animal tracks straighter on its rear legs.	Holstein, Brown Swiss
Foot Angle (FA)	Low to steep	Genetic differences in the steepness of the hoof angle at the front of the toes. A higher value indicates greater hoof angle.	Holstein, Jersey, Brown Swiss
Feet/Legs Score (FLS)	Low to High	Genetic differences in overall feet and legs, combining mobility and feet and leg structure. A higher value is more desirable.	Holstein
Fore Udder Attachment (FU)	Loose to Strong	Genetic differences in the strength, firmness and shape of the fore udder attachment to the body wall. A higher value indicates a stronger fore udder attachment.	Holstein, Jersey, Brown Swiss
Rear Udder Height (UH)	Low to High	Genetic differences in the distance between the bottom of the vulva and the top of the rear udder attachment. A higher value indicates a higher rear udder.	Holstein, Jersey, Brown Swiss
Rear Udder Width (UW)	Narrow to Wide	Genetic differences in the distance across the rear udder at the point of attachment. A higher value indicates a wider rear udder.	Holstein, Jersey, Brown Swiss
Udder Cleft (UC)	Weak to strong	Genetic differences in the depth of the cleft between rear quarters at the bottom of the udder. A higher value indicates a stronger udder cleft.	Holstein, Jersey, Brown Swiss

Udder depth (UD)	Deep to shallow	Genetic differences in the distance between lowest point of udder floor and point of the hock. A higher value indicates a shallower, more desirable depth.	Holstein, Jersey, Brown Swiss
Front Teat Placement (FT)	Wide to close	Genetic differences in the distance between the base of the front teats. A higher value indicates more closely placed front teats.	Holstein, Jersey, Brown Swiss
Rear Teat Placement (RT)	Wide to close	Genetic differences in the distance between the rear teats as viewed from behind. A higher value indicates more closely placed rear teats.	Holstein
Teat Length (TL)	Short to long	Genetic differences in the length of longest teat. A value nearer to zero is more desirable.	Holstein, Jersey, Brown Swiss
Genomic Individual Inbreeding (Ind Inbrd)		This value measures actual homozygosity and percentages of genes in common instead of expected fractions of individual inbreeding calculated from pedigrees. Values closer to zero are more desirable.	Holstein, Jersey, Brown Swiss
Genomic Future Inbreeding (Fut Inbrd)		This value indicates the level of inbreeding the progeny of this animal will contribute in the population if mated at random. The reference population represents all genotyped animals born in the last ten years. Values closer to zero are more desirable.	Holstein, Jersey, Brown Swiss
Fertility Haplotype Status			
Status for Holstein Haplotype 1 (HH1)		"C" Carrier, "F" Free. The status "Carrier" corresponds to animals with one copy of this haplotype that negatively affects fertility. Carrier females, when bred to Free bulls, should experience no negative impact in fertility due to this haplotype. Breeding Carrier females to Carrier bulls may result in a 25% chance of embryonic or fetal death of the resulting calf.	Holstein
Status for Holstein Haplotype 2 (HH2)		"C" Carrier, "F" Free. The status "Carrier" corresponds to animals with one copy of this haplotype that negatively affects fertility. Carrier females, when bred to Free bulls, should experience no negative impact in fertility due to this haplotype. Breeding Carrier females to Carrier bulls may result in a 25% chance of embryonic or fetal death of the resulting calf.	Holstein
Status for Holstein Haplotype 3 (HH3)		"C" Carrier, "F" Free. The status "Carrier" corresponds to animals with one copy of this haplotype that negatively affects fertility. Carrier females, when bred to Free bulls, should experience no negative impact in fertility due to this haplotype. Breeding Carrier females to Carrier bulls may result in a 25% chance of embryonic or fetal death of the resulting calf.	Holstein
Status for Holstein Haplotype 4 (HH4)		"C" Carrier, "F" Free. The status "Carrier" corresponds to animals with one copy of this haplotype that negatively affects fertility. Carrier females, when bred to Free bulls, should experience no negative impact in fertility due to this haplotype. Breeding Carrier females to Carrier bulls may result in a 25% chance of embryonic or fetal death of the resulting calf.	Holstein
Status for Holstein Haplotype 5 (HH5)		"C" Carrier, "F" Free. The status "Carrier" corresponds to animals with one copy of this haplotype that negatively affects fertility. Carrier females, when bred to Free bulls, should experience no negative impact in fertility due to this haplotype. Breeding Carrier females to Carrier bulls may result in a 25% chance of embryonic or fetal death of the resulting calf.	Holstein
Genetic Conditions and Milk Components			
(Only available with purchase of CLARIFIDE or CLARIFIDE Ultra)			
Bovine Leukocyte Adhesion Deficiency (BLAD)		"A" Affected,"C" Carrier,"F" Free. A congenital disease that results in cattle with chronic infection, stunted growth, and early death. Carrier animals do not exhibit the disease, but have a 25% chance of producing an affected calf when bred to another carrier. An NR indicates no result available.	Holstein, Jersey, Brown Swiss
Chondrodysplasia		"A" Affected,"C" Carrier,"F" Free. Phenotypes observed vary from lethal fetal disorders to viable calves with wide, round heads, short limbs, and other skeletal abnormalities. Carrier animals do not exhibit the disease, but have a 25% chance of producing an affected calf when bred to another carrier. An NR indicates no result available.	Holstein.
Citrullinemia		"A" Affected,"C" Carrier,"F" Free. Lethal recessive characterized by neurologic signs observed shortly after birth attributed to arginino-succinate synthetase deficiency. Carrier animals do not exhibit the disease, but have a 25% chance of producing an affected calf when bred to another carrier. An NR indicates no result available.	Holstein.
Deficiency of Uridine Monophosphate Synthase (DUMPS)		"A" Affected,"C" Carrier,"F" Free. Calves with DUMPS are aborted early in gestation. Carrier animals do not exhibit the disease, but have a 25% chance of producing an affected calf when bred to another carrier. An NR indicates no result available.	Holstein, Jersey, Brown Swiss
Factor XI		"A" Affected,"C" Carrier,"F" Free. Affected cattle may display a range of signs from no apparent effects to excessive bleeding to internal hemorrhage and death. Carrier animals do not exhibit the disease, but have a 25% chance of producing an affected calf when bred to another carrier. An NR indicates no result available.	Holstein.

Complex Vertebral Malformation (CVM)		"A" Affected,"C" Carrier,"F" Free. Calves with CVM are either aborted or stillborn with malformed legs and rigid pasterns. They also have abnormal curvature to their spines, fused vertebrae, and fused or missing ribs. Carrier animals do not exhibit the disease, but have a 25% chance of producing an affected calf when bred to another carrier.Calves with CVM are either aborted or stillborn with malformed legs and rigid pasterns. They also have abnormal curvature to their spines, fused vertebrae, and fused or missing ribs. Carrier animals do not exhibit the disease, but have a 25% chance of producing an affected calf when bred to another carrier. An NR indicates no result available.	Holstein, Jersey, Brown Swiss
Brachyspina		"A" Affected,"C" Carrier,"F" Free. Calves with Brachyspina are typically aborted within the first 40 days of gestation, but a small number survive to birth and are born with reduced body weight, short body and neck, and a visible hump between their shoulder blades. Carrier animals do not exhibit the disease, but have a 25% chance of producing an affected calf when bred to another carrier. An NR indicates no result available.	Holstein, Jersey, Brown Swiss
Mulefoot		"A" Affected,"C" Carrier,"F"Free. Calves with Mulefoot have only one claw (as opposed to cloven hooves) on at least one leg. Although Mulefoot is not lethal, it can affect the structure of an animal and may result in lameness. Carrier animals do not exhibit the disease, but have a 25% chance of producing an affected calf when bred to another carrier. An NR indicates no result available.	Holstein
Haplotype for Cholesterol Deficiency (HCD)		"0" is a Non-Carrier, "1" is a Carrier, "2" is Homozygous, "3" is a Suspect Carrier, "4" is Suspect Homozygous. Homozygous calves exhibit a cholesterol deficiency and chronic diarrhea resulting in death by 6 months of age. Carrier animals do not exhibit the disease, but have a 25% chance of producing a homozygous calf when bred to another carrier. Suspect carrier/ suspect homozygous animals' haplotype isn't confirmed by their pedigree.	Holstein
Recessive Red		Characterizes genotype at the recessive red locus. In Holsteins, only influences coat color in animals with the DR0 genotype at the Dominant locus. Animals will be reported as: ED/ED (Black); ED/EBR** (Holstein only - Black, carrier of Black/Red); E+/ED** (Holstein only - Black, wild type red carrier); ED/e (Black, carrier of recessive red); EBR/EBR** (Holstein only - Homozygous Black/Red); EBR/-** (Holstein only - Black/Red, red carrier); E+/E+ (Homozygous wild type red); E+/e (Wild type red, carrier of recessive red); e/e (Homozygous recessive red). An NR indicates no result available. Results designated with ** include information obtained from CDCB haplotypes.	Holstein, Jersey, Brown Swiss.
Dominant Red		Characterizes genotype at the dominant red locus. Animals will be characterized as: "DR2" when possessing 2 copies of the dominant red allele; "DR1" when heterozygous carrying one copy of the red allele; or "DR0" when not carrying any copies of the red allele. Coat color is determined by Recessive Red locus in DR0 animals. An NR indicates no result is available.	Holstein
Horn/Polled		Tested Homozygous Polled (PP) – these animals will always pass a Polled gene to their offspring as they carry two alleles of the polled gene, Tested Heterozygous Polled (PC) – carrier of polled allele thus are observed Polled but carry a horned gene, Tested free of the Polled Condition (TP) – these have horns. "Indeterminate" (I) will be assigned where standard genomic testing information is not able to determine the result. The Polled condition is a dominant trait, however the gene frequency in dairy breeds is very low for the polled gene. When two heterozygous polled animals are bred together, the resulting calves have a 25% chance of being horned. An NR indicates no result available.	Holstein, Jersey, Brown Swiss
Beta Lactoglobulin		Characterization of the Beta Lactoglobulin content of milk. BB is the most desirable genotype. An NR indicates no result available.	Holstein, Jersey, Brown Swiss
Beta Casein A2		Characterization of the Beta-Casein content produced in milk. A2/A2 is the most desirable genotype. An NR indicates no result available.	Holstein, Jersey, Brown Swiss
Alpha S-1 Casein		Characterization of the Alpha-Casein content produced in milk. CC is the most desirable genotype. An NR indicates no result available.	Holstein, Jersey, Brown Swiss
Kappa Casein I		Characterization of the Kappa Casein content produced in milk. BB is the most desirable genotype. An NR indicates no result available.	Holstein, Jersey, Brown Swiss
Kappa Casein II		Characterization of the Kappa Casein content produced in milk. AA is the most desirable genotype. An NR indicates no result available.	Holstein, Jersey, Brown Swiss
Evaluation Information			
Result Type		Describes the type of evaluation from which the results were derived. Weekly evaluations are reported as "Preliminary" and do not include reliability values. These results are estimated to be highly correlated with full runs based on CDCB data. Monthly evaluations are reported as "Final" and include all values.	Holstein, Jersey, Brown Swiss
Evaluation Date		Date of the evaluation from which reported results were derived.	Holstein, Jersey, Brown Swiss

Worldwide suppliers of breeding livestock

[illegible]

Bulafrica Farming SA cc

[illegible]

Dear Breeder

Bulafrica Farming SA encompasses a vast range of experience in the field of Domestic Livestock Breeding and Production accumulated during almost 30 years of work in the field of Animal Husbandry and Livestock Improvement.

Dr Piet [illegible], the Founder Member of Bulafrica gained his experience in the above field working as Field Officer for the Animal & Dairy Science Research Institute which later became the Animal Improvement Institute of the Agricultural Research Council of South Africa. He retired from the Council as Chief Research Officer and Manager of the Foreign Services Division. In the latter capacity he travelled extensively, particularly in the Middle East, South East Asia and Africa. He has also a very good knowledge of South America where he lived for 17 years.

He became involved with the export of breeding stock since 1984 and the activities grew steadily until 1992, when all doors opened and the demand for South African Genetic Material increased exponentially.

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- Angola, Botswana, Cameroon, Comoros, Congo Brazzaville, Djibouti, DRC, Egypt, Ghana, Kenya, Libya, Malawi, Mauritania, Mauritius, Mozambique, Rwanda, Senegal, Sudan, Swaziland, Zambia and Zimbabwe.
- Iran, Iraq, Jordan, Oman, Qatar, Saudi Arabia, United Arab Emirates and Yemen.
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E-mail: [illegible]@mweb.co.za

Photo: SA Heifers in the UAE [illegible]

JEBRASKA

HOLSTEIN

JEBRASKA

002234642666 - 180H088316 16/12/2014
GAEC DES FENIASSIERS - PLENEE JUGON (22)

INDIENNE, dam of JEBRASKA

A BULL THAT HAS IT ALL!!

- Excellent daughter fertility
- Longevity and calving ease
- Udder, feet and legs impover

JEBRASKA

TPI 2462

PRODUCTION	76% Rel. / dtrs / herds	
Milk		462
Fat	0.08%	40
Protein	0.03%	23
Net Merit ($)		620
Fluid Merit ($)		570
Cheese Merit ($)		642
Grazing Merit ($)		626
KCAS : AB	BCAS : A1A2	

FUNCTIONAL TRAITS		
GÈNE SANTÉ Health synthesis		1.3
GÈNE SANTÉ Ketosis	Rel. 65	-0.2
Sire Calving Ease		5.5
Daughter Calving Ease		4.6
Productive life		7.7
Somatic cell score		2.75
Fertility Index		3.5
Daughter pregnancy rate		3.4
Heifer Conception Rate		3.0
Cow Conception Rate		4.1
Sire stillbirth		7.7
Daughters stillbirth		6.0
CDH		Non-carrier

TOTAL TYPE INDEX			dtrs / herds	
PTAT	1.7			
Udder Index	2.4			
Feet and legs Index	1.5			
Body comp	0.4			
Dairy comp	0.2			
Stature	0.8	short		tall
Strength	0.1	frail		strong
Body depth	-0.2	shallow		deep
Dairy form	-0.1	tight ribbed		open ribbed
Rump angle	1.1	high pins		sloped
Thurl width	0.4	narrow		wide
Rear legs side view	-0.3	posty		sickled
Rear legs rear view	1.5	hock-in		straight
Foot angle	1.6	low angle		steep angle
Feet & legs score	1.6	low		high
Fore udder attachment	3.1	loose		strong
Rear udder attachment	2.5	low		high
Rear udder width	2.3	narrow		wide
Udder cleft	1.3	weak		strong
Udder depth	3.1	deep		shallow
Front teat placement	1.6	wide		close
Rear teat placement	1.1	wide		close
Teat length	-0.9	short		long

-1 0 1 2

Reference : CDCB PTAs

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