BRAHMAN

CLIMATE CHANGE: The true value of cattle

Far greater than the production of beef, the true value of cattle lies in addressing climate change, which threatens the future of city-based civilisation including all businesses and economies, said Allan Savory in his keynote address at the recent July World Brahman Congress in Paraguay.

"If we place any value on cities, businesses and economies then a scientifically well-informed society would be investing trillions of dollars in cattle management now, and certainly considerably more than is being invested in defense and space exploration."

He added that biodiversity loss, desertification, mega-fires and climate change are feeding on each other and spiraling out of control. "In today's world the vast majority – many billions of people, including those in most prestigious universities, environmental organisations and international agencies – blame cattle, oil, and coal as the three main things causing climate change. Not only is this the mantra of the World Wildlife Fund (WWF), the International Union for Conservation of Nature (IUCN) and other major environmental organisations and mainstream media, but also now of billionaires and film star celebrities, like fish in a feeding frenzy, promoting and investing in chemically manufactured meat and even vegan leather."

According to Allan people used to rely upon reputable organisations like the National Geographic Society for credible scientific information, but they wrote recently: *"Cattle release nitrogen dioxide and methane while also compacting soil, which prevents it from storing carbon and methane."*

Unfortunately, he said, the discovery over sixty years ago that cattle are essential to reverse desertification has not been considered the "exciting new discovery" by governing institutions. "This is because the world's authorities believe for certain that cattle cause climate change. Such proof by authority can hold up science for centuries. Science must replace this belief, or the future will be one of greater violence and suffering than ever known or imaginable as we continue to destroy our life-supporting environment and people abandon failing cities and businesses. Desertification, the point at which the deadly cycle can be disrupted, can only be reversed biologically using cattle (and other herbivores). Being a biological problem, it can never be reversed by investing hundreds of trillions of dollars in any technology imaginable. The belief prevailing at endless climate conferences that desertification, and thus climate change, can be addressed using technology in some form is just that – a belief – not supported by any known science."

Blaming cattle, sheep and goats started thousands of years ago when the first cities began failing in the fertile crescent, he added. "This we learn from ancient texts blaming the nomads and their animals for causing the deserts that overwhelmed their cities. Just as we once believed the world was flat, humans have always believed that if land is being damaged by animals, it is because there are too many animals. So ancient and deep is this belief that it assumed scientific validity and was grandfathered into science as proven fact."

According to him thousands of PhD dissertations and peer-reviewed papers are based on this belief that too many animals result in overgrazing and desertification. On the contrary, only livestock can stop man-made desertification adding further carbon, and reverse it to store carbon for millennia in the world's desertifying grasslands and savannas. Similarly, only technology can stop fossil fuels emitting greenhouse gases.

Allan added: "Cattle, oil, coal, soil and water are all resources. We cannot even imagine how soil or water could cause climate change.

Allan Savory is a lifelong ecologist and the creator and co-founder of Savory Institute. He initiated holistic management, a systems-thinking approach to managing resources. His textbooks have influenced thousands of ranchers and land stewards across the globe. In addition, he is well acquainted with the Brahman breed, having worked with these cattle in Africa, America, India, Pakistan and Paraguay over many years.

"Even if the entire world became vegan, never ate another beef steak and leather made from coal and oil replaced that from cattle, climatologists and governments still could not address climate change without millions more cattle to do so. This I believe needs to be reflected in the Brahman breed's leadership and brand for the sake of all of us." – Allan Savory

It is equally unimaginable how cattle, coal or oil can do so. Science, as opposed to belief, informs us that only the way we manage these resources can lead to climate change."

In reference to shocking biodiversity loss in many international parks he remarked that there are no cattle to blame. "The management in these parks is supported by the world's universities, governments, billionaires, celebrities, vegans and large environmental organisations staffed by people with the highest academic credentials. They are in effect managed by cattle farmers'

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On the brink of an advanced breeding era

Mecki Schneider
Brahman council member

The history of animal breeding has over centuries developed from visual appraisal and selection based on pedigrees but over the last thirty years shifted to differentiating between environmental and genetic factors that influence animal performance. The genetic component is based on the selection of estimated breeding values (EBV). However, to be able to calculate EBVs it is of utmost importance to have comprehensive data on various traits such as:

- at birth (birth weight and calving ease)
- growth (based on 200-, 400- and 600-day weights, as well as mature cow weight)
- milking ability
- fertility (based on scrotal size and days-to-calving)
- carcass traits (eye muscle area, rib and rump fat, intermuscular fat and retail beef yield)
- feed efficiency (net feed intake), and
- traits scored such as docility and others.

Good data on these traits requires the measurement and submission of well-structured data in contemporary groups. The BREEDPLAN scoring system of completeness of information recording reflects the quality of data submitted by breeders.

Over the past decade Southern African breeds have embraced the challenge of applying genomic information to the assessment of estimated breeding values as well as identifying genetic defects related to specific breeds. To utilise the additional information through genotyping a particular animal it is of cardinal importance that it is supported with good performance data to benefit from the advantages of genotyping. This will lead to genomic-supported EBVs or simply GEBVs through a single-step process for the evaluation of EBVs by using the pedigree, performance recording (phenotypic data) and genomics data. Through the support of the beef genomics programme the past few years the Livestock Registering Federation (LRF) has advised breeders to focus first on obtaining good data, especially for difficult-to-measure traits and to strive for whole herd recording (e.g. not only growth traits).

Advantages of genotyping

- The accuracy of difficult-to-measure traits (usually expensive like feed efficiency) or traits which can only be measured in one sex, such as fertility, can improve considerably. Typically, such traits would include fertility, milking ability, feed efficiency, carcass traits, meat quality and others. For easy-to-measure traits, like all the growth traits, there is not much benefit.
- More reliable EBVs can be obtained at a very early stage of an animal's life, e.g. when born or even at embryonic stage without having own measured data. Hence selection can take place earlier and the generation interval can be significantly shortened (see Fig 1).
- Animals which are in a single contemporary group will have more accurate EBVs.
- The pedigree of an animal is verified in each evaluation if the parents have been genotyped resulting in more accurate pedigrees and and hence also EBVs.
- The identification of genetic defects (every breed has some) is another important tool in selecting animals for the next generation.

The first step in the development of applying genomic data in the evaluations was to create genomics modules – or databases – next two the present pedigree and performance recording databases. Namibian Brahmans have invested in the development of this module set up by the Agricultural Business Research Institute (ABRI) in Australia.

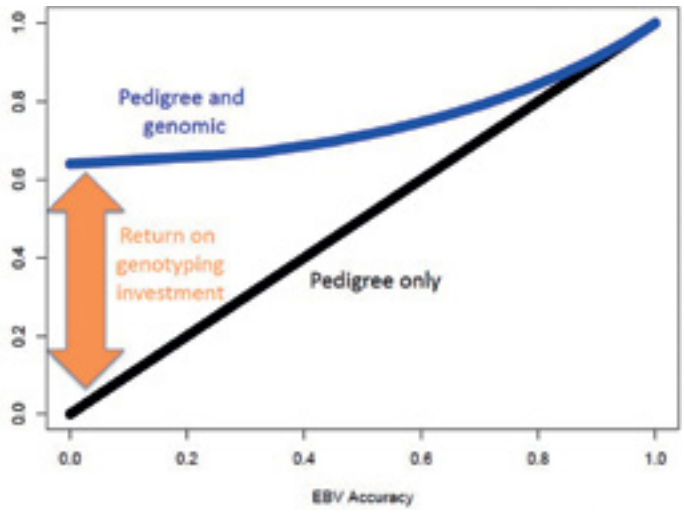

Figure 1: This graph clearly shows that EBVs with a very low accuracy (as with most difficult-to-measure traits) can improve considerably if genomics is applied. In this case the black line denotes that only pedigree information was used.

The next step in the development of using genomic information in the selection process was the creation of a reference population for the breed. This must be well structured to ensure maximum benefit with minimum costs. Namibian Brahmans embarked upon this process with the support of the Namibian Stud Breeders Association (NSBA). To represent the genetic make-up of the breed it is important that animals with high and low EBVs are genotyped and phenotypic data of new animals are added continuously. Take note that genomics will not replace performance recording.

The heritability of each trait determines the minimum number of genotypes required to add proper value to determining genomic-

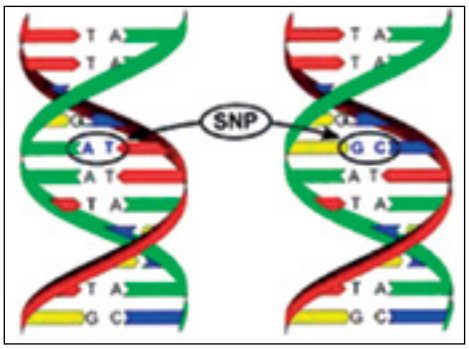

Figure 2. Single Nucleotide Polymorphisms (SNP) are variants at a specific location (position) on the chromosome. All genes associated with a trait can potentially be associated with a SNP.

assisted EBVs, i.e. GEBVs. Much planning has gone into the structuring of a reference population representing a wide as possible genetic base of the breed. At the starts of the beef genomics programme all stud sires and influential females of participating breeders were genotyped.

In addition, the Namibian Brahman Breeders Society (NBBS) invested N$100 000 from its reserves to genotype stud sires of non-BGP participating breeders. In collaboration with the Southern African Brahman Breed Improvement Forum (BBIF), South Africa committed to contribute N$200 000 per annum and Namibia N$100 000 per annum for three years. Thus, almost N$1 million will be invested to strengthen the drive for genomic-enhanced EBVs for Brahmans.

More than six years ago genomic world expert Dr Ben Hayes from Australia advised breeders from South Africa, Zimbabwe and Namibia to use the specific SNP chip developed for genotyping Bos Indicus cattle (see Fig 2). This chip contains much more information for Brahmans than those developed for European breeds. The international company Neogen offers a 50k (50 000 markers) Bos Indicus chip which has been introduced as the norm by Southern African Brahman breeders. The LRF negotiated lower costs with Neogen for genotyping stud animals up to February this year.

Moreover, members of the NBBS decided at their 2021 AGM that all calves born from a certain date after mid-2022 can only be registered if the sire has been genotyped. This has its challenges at present but will be the best way forward for Brahmans to seriously engage in the new era of animal breeding.

Presently the results of more than 500 additional genotypes for Namibia Brahman animals are awaited from the Neogen laboratory in Brazil. This will bring the total of genotyped Namibian Brahmans to over 1 000 genotypes. With more than 2 000 genotypes in the reference population (including South African Brahmans) ABRI Australia will soon be approached to assess whether GEBVs for Brahmans can still be evaluated on a routine basis this year.

Namibian Brahman breeders are looking forward to strengthening the genetic profile of the national stud herd.

The true value of cattle

63 critics. Frankly, it is time to stop blaming, arguing, being defensive or silent as we have done through 26 climate conferences. It is time to acknowledge that we need to collaborate instead. We either address the cause together as a team to offer hope for future generations, or we continue as we are and face a future of suffering beyond imagination."

Allan concluded that the holistic planned grazing process could break the destructive cycle of climate change. We cannot do it any other way, even if we completely stop using fossil fuels by using technology, planting trees or moving the earth to harvest runoff rainfall, especially in regions receiving less than 300 mm of rainfall. These measures can neither reverse desertification nor feed people in vast regions where 95% of the land can only feed people from animals, not crops.

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The following 4 Günzel Simmentaler Bulls are on offer at the

Sim Xtravaganza

13 OCTOBER 2022

17:00, Agra/Bank Windhoek Ring, Windhoek

Günzel Simmentaler Bulls will be on offer at the following auctions:

Paresis Auction	Hochfeld Combined Auction	Northern Bull Auction
7 Oct 2022	**12 Oct 2022**	**18 Nov 2022**
Agra Auction Pens, Otjiwarongo	Farm Okongeama, Hochfeld	Agra Ring,Grootfontein

Kaspar & Stefanie Günzel | Grootfontein | +264 (0)67 240 272 | 081 129 0273 | kaspar@iway.na

Makalani Brahman
MANSO TYPE

Cell: +264 81 129 0173
Email: kaspar@iway.na

The following 4 Makalani Brahman Bulls are on offer at the

National Brahman Auction
18 OCTOBER 2022
18:00, Agra/Bank Windhoek Ring, Windhoek

Makalani Brahman Bulls will be on offer at the following auctions:

Paresis Auction	Hochfeld Combined Auction	Northern Bull Auction
7 Oct 2022	**12 Oct 2022**	**18 Nov 2022**
Agra Auction Pens, Otjiwarongo	Farm Okongeama, Hochfeld	Agra Ring,Grootfontein

Kaspar & Stefanie Günzel | Grootfontein | +264 (0)67 240 272 | 081 129 0273 | kaspar@iway.na

Why ultrasound scanning rapidly gains ground

Henry Mans, Brahman Breeder

Meat markets across the world have undergone drastic changes over the past twenty years to adapt to consumer demands moving from commodity products to products with a higher value.

The traditional butcher who knew all his customers personally is being replaced by chain stores and direct niche markets. Gone are the days when beef was just another product. Chain stores are differentiating their products and already pay premiums for quality. An example is Woolworths that focuses on the marketing of special products.

In North America, Europe and Australia stud breeders and commercial producers have already launched several actions to promote sales. The Australian producers use ultrasonic scanning to determine the marbling of their cattle and thereby negotiate better prices for their animals. Australia has a large export market, especially to Japan. According to Roger Evans of Bovine Scanning Solutions, which scans nearly 40 000 animals annually to determine marbling, the Japanese market in particular pays premium prices for meat with good marbling. Evans told News Limited that the data enables producers to negotiate better prices because they know more about their product. "Knowing what's inside can add thousands to the selling price, especially if it has decent marbling. It can be compared to buying a car because you want to know what you get." (globalmeatnews.com)

Unfortunately, producers in Southern Africa at present do not get a premium price for marbling, but it will happen in the near future. They do however get a better price for a certain fat cover through the grading system.

In Namibia, more than 20 Brahman breeders participate in the ultrasound scanning process. Approximately 1 800 Brahmans are scanned annually with yearly increases. Namibian Brahmans have the largest ultrasound carcass data base of all Brahmans worldwide and thus make a significant contribution to the international genetic evaluation of a combined run over three continents some years ago.

Brahman breeder Henry Mans busy scanning stud sires.

Furthermore, Namibia Brahman breeders scan more cattle than all other breeds combined, ensuring good data.

The trend at stud bull auctions clearly shows that animals with favourable data are more popular and achieve much better prices, whereas those with poor or no data struggle to sell or get no bids at all.

Why use ultrasound to assess muscling?

Ultrasound scanning for carcass traits is a useful tool to obtain valuable carcass information from a live animal. Ultrasound technology uses sound waves to develop images of body composition. Body composition traits that can be measured include 12th to 13th rib fat thickness, rump fat thickness, ribeye area and intramuscular fat percentage (marbling). Each of these traits is at least moderately heritable and significant in the determination of red meat quality and yield for individual animals.

Unlike growth rate, it is not easy to identify cattle with superior muscling across the loin. Ultrasound images enable breeders to select animals with superior loins and avoid those with a high level of carcass fat.

While this measurement simply reflects muscle depth across the loin, research indicates that selective breeding for muscle depth can greatly enhance total muscle yield.

Raw data or estimated breeding values (EBVs)

As with any raw performance data, muscle and fat depth measurements are affected by non-genetic factors such as age at scanning and herd nutrition. It is important that breeders select on the basis of muscle and fat depth EBVs rather than on raw data alone.

Cattle are scanned between 300 and 800 days of age. Cooking oil is applied to the hide to assist acoustic contact, after which the technician places the transducer across the last rib and lastly the third lumber vertebra to get two images.

As each image is frozen a single linear measurement of muscle depth and eight measurements of fat depth are taken.

Body composition traits

Rib fat: Also called fat thickness or backfat this is an outer fat measurement taken between the 12th and 13th ribs. It is measured in millimetres. Rib fat is used in yield grade calculations and is the most important determinant of retail yield. Higher amounts of rib fat decrease cutability and produce less desirable yield grades.

Ribeye area: This is the surface area of the longissimus dorsi muscle (ribeye) at the 12th rib interface on the beef forequarter. Ribeye area is expressed in square millimetres. Retail product yield increases and numerical yield grade decreases as ribeye area increases. This image is often the most difficult to collect and requires a highly skilled interpreting technician. Both rib fat and ribeye area are taken from the same image (Figure 1).

Rump fat: This refers to the depth of fat at the juncture of the gluteus medius and superficial gluteus medius muscles. This measurement is expressed in millimetres. It is taken from an image collected between the hooks (hips) and pins of the animal. The rump fat measurement, together with the rib fat measurement, is used to determine more accurately the overall external body fat. This improves the accuracy of predicting percent retail product. In most cases an animal will exhibit more fat over the rump than the rib, so often more variation is displayed in rump fat measurements than rib fat measurements. This image is highly repeatable and is the least difficult to collect or interpret.

Intramuscular fat: Intramuscular fat percentage (% IMF) is the percentage of fat in the ribeye muscle. It is often called marbling and is observed as flecks of fat in lean tissue. Degree of marbling is related to intramuscular fat percentage and the primary factor determining quality grade. Higher levels of intramuscular fat

Figure 1. Ribeye area and rib fat image displayed on scanning equipment.

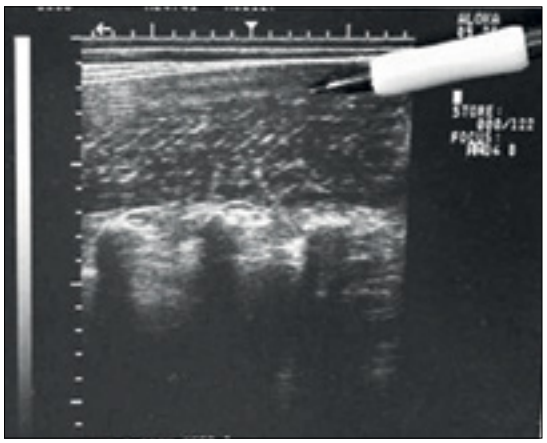

Figure 2. Intramuscular fat image displayed on scanning equipment.

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OKABRA BRAHMANS

Embracing the challenges of tomorrow

Why choose OKABRA BRAHMANS?

35 years of vigorous selection, scrutinizing visual potential and analyzing tens of thousands of data sets leave a mark! Benefit now!

1 You buy genetics with the latest breeding technologies already integrated.

Feed Efficiency: We select for bulls that eat less and gain more than their peers. No stud in Southern Africa has tested more bulls for Residual Feed Intake than OKABRA BRAHMANS.

Fat Values: We extensively measure and select for high fat and thus well-adapted progeny.

2 We test our own bulls under extensive farming conditions in our commercial cow herd using registered Brahman and Simmentaler bulls for maximum hybrid vigour and predictable progeny. We thus understand our customers' need to run profitable herds.

3 **"To measure is to know":** OKABRA BRAHMANs is the largest Brahman stud **worldwide** with a BREEDPLAN 5 star performance recording rating. We understand breeding intricacies better than most and give customized expert advice to our clients.

SPIKA 13-187 OKB

	Gest.	Birth Wt.	200D Wt.	400D Wt.	600D Wt.	Mat. Cow	Milk (kg)	Scrot. (cm)	DtC (days)
13-187 OKB	-1.9	+0.6	+17	+28	+42	+47	+7	+1.3	-4.0
	57%	92%	85%	84%	84%	76%	55%	65%	48%
Breed Avg.	-0.8	+1.6	+16	+25	+32	+33	+3	+0.8	-0.5

Carc (kg)	EMA (cm²)	Rib Fat (mm)	Rump (mm)	Retail Yield	IMF (%)	Docility	NFI-P	NFI-F
+22	+1.5	+1.3	+1.7	-0.3	+0.3	-3.0	-0.07	-0.10
71%	61%	74%	74%	64%	67%	84%	32%	39%
+18	+0.4	+0.1	+0.1	+0.0	+0.0	+1.0	-0.05	-0.05

HADAR 18-385 OKB

	Gest.	Birth Wt.	200D Wt.	400D Wt.	600D Wt.	Mat. Cow	Milk (kg)	Scrot. (cm)	DtC (days)
18-385 OKB	-0.7	+0.9	+17	+23	+32	+35	+7	+0.9	-3.2
	48%	82%	78%	75%	72%	62%	44%	66%	34%
Breed Avg.	-0.8	+1.6	+16	+25	+32	+33	+3	+0.8	-0.5

Carc (kg)	EMA (cm²)	Rib Fat (mm)	Rump (mm)	Retail Yield	IMF (%)	Docility	NFI-P	NFI-F
+15	+0.6	+2.0	+2.6	-0.5	+0.2	+2.0	-	+0.18
61%	48%	57%	57%	49%	47%	69%	-	25%
+18	+0.4	+0.1	+0.1	+0.0	+0.0	+1.0	-0.05	-0.05

National Brahman Auction

18 OCT 2022

18:00, Agra/Bank Windhoek Ring, Windhoek

NORTHERN SELECT

4 NOV 2022

11:00, Agra Auction Pens, Grootfontein

Schneider Family • Grootfontein Namibia

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Agra Auctions: Paul Klein 081 128 6731

Live Webcast Online Livestock Auction

Nuwe, meer ervare en gesoute Brahman-telers tydens die onlangse jaarlikse inligtingsdag vir nuwe telers.

Dag vir nuwe telers goed ondersteun

Afgesien van drie beginnertelers wat op 12 Julie aangemeld het vir die jaarlikse inligtingsdag van die Brahman-telersgenootskap, het medetelers in sterk getalle opgedaag om hulle opnuut te vergewis van genootskapsake. Een teler het sy werkers gebring sodat hulle ook op hoogte van sake kan kom. Nagenoeg veertig mense was teenwoordig.

Dié geleentheid spruit uit 'n genootskapbesluit om nuwe telers binne twee jaar ná aansluiting "in te lyf" en relevante inligting oor te dra. Dit is by die Agra-ring op die Windhoek-skouterrein aangebied. Die belangrikste sake onder bespreking was:

- Die grondwet van die Brahman-genootskap wat al die belangrike aspekte van stoetteling en registrasie uitlig.
- Die struktuur van die genootskap, lidmaatskap en heffings.
- Die strategiese plan en doelwitte vir die Brahman-ras
- Die etiek en gedragskode vir telers.
- Die rol en funksie van die genootskap en hoe die genootskap by die Namibië Stoettelersvereniging inskakel.
- Die keuringsproses van diere.
- Opleiding en die struktuur van kursusse vir bevordering.
- Deelname aan prestasietoetsing, die jongste tegnologiese ontwikkelings en die beesvleis-genomikaprojek.
- Deelname aan die Nasionale Brahman Veiling en vereistes waaraan voldoen moet word.
- Aanmoediging om betrokke te wees by genootskap-aktiwiteite.

Van links is raadslede van die Brahman-genootskap Ryno van der Merwe, Manfred Izaaks, NSV-bestuurder Jacque Els en raadslid Pieter Gouws Jr. Ryno en Pieter was die aanbieders by die jaarlikse inligtingsdag vir nuwe telers.

Why ultrasound scanning rapidly gains ground

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improve quality grade. This measurement should be collected when cattle are maintaining a high level of nutrition.

The field technician collects three images (Figure 2), and the values generated by the interpreting software are averaged for an overall intramuscular fat percentage.

Acceptable scanning ages

Yearling bulls and heifers can be scanned at approximately 300 to 800 days of age to provide a good indication of how sibling steer and heifer mates will perform on the rail (www.extension.msstat.edu). It is however of utmost importance, as with any data evaluation, that the animals scanned are in contemporary groups, preferably with more than one sire within a contemporary group.

"To measure is to know. If you cannot measure it, you cannot improve it." - Lord Kelvin

Ultrasound scanning technology is a useful tool for collecting body composition data on live animals. The resulting data is less expensive and time consuming compared with actual harvest data from beef carcasses. This technology allows breeders to collect body composition data on prospective breeding animals for use in genetic improvement efforts.

In conclusion

Apart from the direct carcass evaluation by ultra-sound scanning, it guides you on some selection criteria to identify next generation sires:

- The eye muscle area EBV is a good indication of overall muscling of an animal – the higher the value, the more overall muscling.
- The rib and rump fat EBVs determine early marketability of animals off the veld. These animals have the genetic ability to put on a preferable fat cover earlier.
- Higher rib and rump fat EBVs show the earlier maturing and sooner in production type, as well as those with a better body condition score to come on heat earlier.

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WOKUMA BRAHMAN

IMPROVE YOUR HERD'S FEED EFFICIENCY WITH A WOKUMA BRAHMAN NFI-TESTED BULL

Semen of the following 2 bulls will be on offer at the National Brahman Auction 18 October 2022

Both are the sons of 07-0404OKB, who has an outstanding 351 recorded progeny and is currently still active at the age of 15 years.

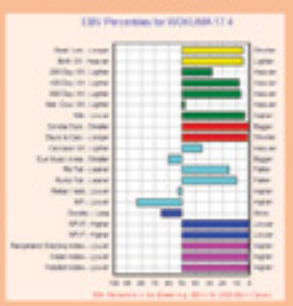
17-0004 WB

17-0004 WB is currently ranked No 1 in terms of NFI (NFI-P of -0.82) for all Brahman bulls in Southern Africa. From the EBV info it is clear that the female progeny of 17-0004 WB will have a short DtC, low Birth Weight but good Growth from 200 - 600 days. The average Mature Cow Weight (MCW) indicates that although progeny will have excellent growth, this will not lead to increased cow size. Scrotal size is above average, in the top 1%. Selection Indexes are very good.

	Gest.	Birth Wt.	200D Wt.	400D Wt.	600D Wt.	Mat. Cow	Milk (kg)	Scrot. (cm)	DtC (days)	Carc (kg)
17-0004 WB	-2.0 54%	+0.2 86%	+19 80%	+35 79%	+47 78%	+34 69%	+6 53%	+3.9 78%	-5.9 48%	+19 69%
Breed Avg.	-0.8	+1.6	+16	+25	+32	+33	+3	+0.8	-0.5	+18

EMA (cm^2)	Rib Fat (mm)	Rump (mm)	Retail Yield	IMF (%)	Docil-ity	NFI-P	NFI-F	Rangel. Idx (N$)	Wean Idx	Feedl. Idx
+0.2 61%	+0.4 68%	+0.6 68%	+0.0 60%	-0.1 60%	-0.6 66%	-0.82 64%	-0.64 59%	+$218	+$137	+$170
+0.4	+0.1	+0.1	+0.0	+0.0	+1.0	-0.05	-0.05	+$110	+$67	+$72

H.B.S. HUNT DIAMOND LOX 89
OKABRA ARUM 04 167
OKABRA KERA 01 469
Sire: OKABRA SAGON 07 404
TECKLENBURG SIR LOUIS 86 94
OKABRA SIKA 05 392
OKABRA HESSA 98 29
Animal: WOKUMA 17 4
WOKUMA MR WOKUMA 0650
MR WOKUMA 09 140
WOKUMA MRS WOKUMA 0670
Dam: WOKUMA MRS 13 58
WOKUMA MR-0056
MRS WOKUMA 10 88
WOKUMA MRS-0453



18-0021 WB

18-0021 WB is an excellent bull with good growth from 200 - 600 days. Mature Cow Weight is below average, indicating that his progeny will have good growth, but will not increase size. His excellent carcass traits with excellent EBVs for Rump Fat, Rib Fat and IMF make this bull an excellent choice with outstanding selection indexes.

	Gest.	Birth Wt.	200D Wt.	400D Wt.	600D Wt.	Mat. Cow	Milk (kg)	Scrot. (cm)	DtC (days)	Carc (kg)
18-0021 WB	-1.1 48%	+1.3 71%	+18 72%	+32 72%	+41 73%	+30 67%	+4 54%	+2.3 59%	-7.4 45%	+19 63%
Breed Avg.	-0.8	+1.6	+16	+25	+32	+33	+3	+0.8	-0.5	+18

EMA (cm^2)	Rib Fat (mm)	Rump (mm)	Retail Yield	IMF (%)	Docil-ity	NFI-P	NFI-F	Rangel. Idx (N$)	Wean Idx	Feedl. Idx
+1.3 55%	+0.5 63%	+0.6 63%	+0.3 55%	+0.2 56%	+2.3 57%	-0.55 58%	-0.46 66%	+$189	+$127	+$158
+0.4	+0.1	+0.1	+0.0	+0.0	+1.0	-0.05	-0.05	+$110	+$67	+$72

H.B.S. HUNT DIAMOND LOX 89
OKABRA ARUM 04 167
OKABRA KERA 01 469
Sire: OKABRA SAGON 07 404
TECKLENBURG SIR LOUIS 86 94
OKABRA SIKA 05 392
OKABRA HESSA 98 29
Animal: WOKUMA 18 21
WOKUMA MR WOKUMA 0650
MR WOKUMA 09 140
WOKUMA MRS WOKUMA 0670
Dam: WOKUMA 15 30
WOKUMA MR-0056
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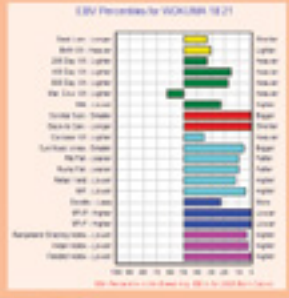

AUCTION DATES:

Hochfeld Joint Production Auction – Summer Sale
12 October 2022 Farm Okongeama, Hochfeld

National Brahman Auction
18 October 2022 AGRA Bank Windhoek Ring, Windhoek

Regenerative farming can deliver environmental benefits while maintaining productivity

A newly published study by Colorado State University and partners found that adaptive multi-paddock (AMP) grazing, which involves grazing small areas with a high density of livestock for a short period of time, followed by long rest periods, can help capture carbon and boost nitrogen soil retention.

The trial compared conventional grazing practice with AMP grazing on neighbouring farms and found that on average, soils under AMP grazing have 13% more soil organic carbon and 9% more soil nitrogen.

Clare Hill, regenerative farming director at FAI Farms, says this latest study, in combination with a growing evidence base on their own AMP trial results in the UK, demonstrates the scope of regenerative farming techniques in driving more resilient beef production.

Red Brahmans of the Brahmarein Stud.

"In simple terms, the grazing technique works alongside rather than against nature, and aims to create a more resilient farming system that supports environmental and sustainability targets."

There is often an assumption that low productivity is attached to regenerative agriculture given its low input approach. However, Clare says this has not been their experience and the level of animal performance they have seen so far would rival conventional beef production systems.

More than a third into the four-year project they have already seen positive results. Beef cattle achieve a daily live weight gain of 1,4 kg with 50% of livestock finished off grass before 20 months.

"With the beef industry under increasing pressure to move towards more sustainable production systems that support environmental goals, I am hopeful that this growing evidence base will help scale up regenerative techniques across the sector," Clare concluded.

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The economic impact of infertility

Beef producers need cows to become pregnant, deliver healthy calves and wean productive calves at a reasonable cost to make farming economically viable. Failure of breeding females to become pregnant adversely affects the economic viability of every beef operation. Four academics of the University of Florida discuss this issue in the article alongside. They are Chris Prevatt, Cliff Lamb, Carl Dahlen, Vitor Mercadante and Kalyn Waters.

Why do beef cows fail to become pregnant or wean a calf? Beef cows fail to become pregnant for numerous reasons, such as anestrus and prepuberty, diseases, poor body condition, calving difficulty, or a lower level of producer management. Cows and heifers may not start their estrous cycles during the breeding season. In addition, cows may become pregnant but fail to calve because they lose their pregnancy at some stage of gestation due to a disease or traumatic event. In any case, the adverse economic impacts of beef cows failing to calve and wean a calf are large.

Approximately 35% of US beef producers use pregnancy detection as a management practice to determine if cows are pregnant and to make culling decisions. Pregnancy detection usually occurs about 30 to 90 days after the end of the breeding season. In southeastern United States (including Florida) only 19% of producers use this tool to make culling decisions. Pregnancy diagnosis gives producers an opportunity to identify infertile cows and cull them before they spend additional money on an open cow that will not produce calf revenue.

However, removing these cows from the herd to maintain a steady population of brood cows may decrease a producer's ability to cull other cows that may fail to raise acceptable calves, or should otherwise be culled for legitimate production issues, such as age, temperament, structural concerns and poor health. For the 65% who do not use pregnancy diagnosis in their operations, the first opportunity to determine which cows are not pregnant is after the subsequent calving season. At that point, producers may decide to retain the cows that failed to calve or cull those cows prior to the next breeding season. Either way, the producer has already incurred the costs of maintaining these cows for up to a year without producing a calf. With no calf sales from these unproductive cows, the costs of supplemented feed, pasture, veterinary medicine inputs and services, labour, machinery and equipment, and other expenses will decrease the current and lifetime profitability of the cowherd.

Which are the infertile beef cows? To identify the infertile beef cows in a beef cattle operation, cattle producers should consider implementing a defined breeding season of reasonable length (60 to 120 days). Approximately 30 to 90 days after the breeding season, a qualified person (beef producer, technician, veterinarian, etc.) should check the exposed beef cows and heifers for pregnancy using methods such as blood sampling, palpation and ultrasound. The cows and heifers found open are deemed infertile for the given production cycle. These infertile cows can be managed differently or marketed to reduce production costs and improve profitability. In addition, some pregnancy checking methods can determine the number of months pregnant. Determining the months the cow or heifer is pregnant can help the producer identify late-bred cows, which are considered less fertile. Both these types of infertility represent sizeable economic losses to the beef producer.

What is the economic impact of infertile beef cows? Infertile cows that fail to wean a calf (cows and heifers that are identified as open, or those that become pregnant during breeding but do not wean a calf) simply do not give producers an opportunity to market a calf. Therefore, keeping an infertile cow with no prospects of economic return for the current production season requires the producer to incur the cost to carry this cow for up to one year as well as forgo the profits from the sale of the calf.

Table 1 displays the estimated annual economic loss of infertile beef cows in US$ for a 100-head cowherd using various percentages of infertile beef cows in the cowherd and annual economic loss per cow. The first column shows the annual production costs, which range from US$500 (N$7 410) to US$900 (N$13 338) per head per year. The second column is the average forgone net profits of a productive cow that weans a calf each year, which are assumed to be US$200 (N$2 964) per cow. The sum of column one (annual production costs, US$/cow/year) and column two (forgone profits, $/cow/year) represents the annual economic loss per cow per year, as shown in column three. The annual economic losses per cow per year range from US$700 (N$10 374) to US$1 100 (N$16 302). Multiplying the level of annual economic loss per cow times the number of infertile cows in the 100-head cowherd provides an estimate of the total annual economic loss for the 100-head cowherd.

Annual Production Costs ($/cow/year)	Forgone Profits ($/cow/year)	Annual Economic Loss ($/cow/year)	Percent of Infertile Beef Cows				
			4%	6%	8%	10%	12%
			4 head	6 head	8 head	10 head	12 head
			Total Annual Economic Loss ($ per 100-head cowherd), $/year				
$500	$200	$700	$2,800	$4,200	$5,600	$7,000	$8,400
$600	$200	$800	$3,200	$4,800	$6,400	$8,000	$9,600
$700	$200	$900	$3,600	$5,400	$7,200	$9,000	$10,800
$800	$200	$1,000	$4,000	$6,000	$8,000	$10,000	$12,000
$900	$200	$1,100	$4,400	$6,600	$8,800	$11,000	$13,200

Estimated total annual economic loss of infertile beef cows (US$), 100-head cowherd. It should be noted that the prices are from 2009, though it expresses the principle quite clearly!

The estimated total annual economic losses of infertile beef cows using a 100-head cowherd in Table 1 range from US$2 800 (N$41 496) to US$13 200 (N$195 624), depending on the number of infertile beef cows in the cowherd and annual economic loss per cow per year. If you assume an annual production cost of US$700 (N$10 374) per cow per year and forgone profits of US$200 (N$2 964) per cow per year resulting in an annual economic loss of US$900 (N$14 368) per cow per year with an 8% level of infertile beef cows (8 head), the estimated total annual economic loss due to infertile beef cows is US$7 200 (N$106 704) for the 100-head cattle operation. Producers should attempt to reduce losses of this magnitude.

If the producer can reduce the percentage of infertile beef cows from 8% (8 head) to 6% (6 head), the annual economic loss would be reduced by US$1,800 or N$26 676 (U$7,200/N$106 704 to US$5,400/N$80 028) for a 100-head beef cow operation. If the producer can reduce both the percentage of infertile beef cows from 8% to 6% and the total economic loss from US$900 (N$13 338 to US$800 (N$11 856) per cow per year, the total annual economic loss is reduced by US$2,400 N$35568) (US$7,200 N$106 704 to US$4 800/N$71 136). It is important to understand that attempting to reduce the percentage of infertile beef cows to 0% is likely not the most economical course of action.

What is the economic impact of less fertile beef cows? Beef producers need to consider the potentially large economic losses associated with less fertile beef cows and heifers. Less fertile beef cows become pregnant and calve later in the calving season. Table 2 shows the estimated reduced revenue of less fertile beef cows in a 100-head cowherd that has a 120-day breeding season. The cowherd is assumed to have a 90% weaning rate. To provide a basic economic example, a normal distribution of calving is assumed over the

Data Measurements	Calving During the First 60 Days	Calving During the Second 60 Days	Value Differences
One-half of breeding season, days	60	60	0
Midpoint of days	30	90	-60
Beef cows, head	50	50	0
Number of calves, head	45	45	0
Average calf weight, lb/head	550	450	100
Average calf price, $/lb	$1.42	$1.50	-$0.08
Total calf weight, lb	24,750	20,250	4,500
Calf value per head, $/head	$781	$675	$106
Total value of calves, $	$35,145	$30,375	$4,770

Estimated reduced revenue of less fertile beef cows (100-head cowherd, 120-day breeding season*).

120-calving season, which means half of the calves will be born during the first 60 days and the remaining half will be born during days 61 to 120. Lastly, all calves are assumed to be sold within one to two weeks at the end of the calf production period.

The second column in Table 2 describes the data for the beef cows calving during the first 60 days (days 1 to 60 of the calving season). The midpoint of the calving period is day 30. We assumed that 90% of the 50 cows calving during the first 60 days would wean a calf, resulting in 45 calves. These calves were assumed to have an average weaning weight of 550 pounds (249 kg) per head. The total calf weight for this group was 24,750 pounds/1 114 kg (550 lb/calf x 45 head). The average calf value was US$781/N$11 574 per head (550 lb/head x US$1.42/lb average price). The total value of the 45 calves calving during the first 60 days was US$35,145/N$520 848 (US$781/head x 45 head).

Column three describes the data for the beef cows calving during the second 60-day period (days 61 to 120 of the calving season). The midpoint of this calving period is day 90. We assumed that 90% of the 50 cows calving during the second 60-day period would wean a calf, resulting in 45 calves. These calves were assumed to have an average weaning weight of 450 pounds (204 kg) per head. The average market price for these calves (medium-large frame, #1 and #2 muscle score) was estimated to be US$1.50/N$23.95 per pound (Prevatt 2009). The total calf weight for this group was 20 250 pounds (9 185 kg (450 lb/calf x 45 head). The average calf value was US$675/N$10 776 per head (450 lb/head x $1.50/lb). The total value of the 45 calves produced during the second 60-day period was US$30 375/N$484 928 (US$675/head x 45 head).

There is a significant difference between the total values of the two groups of calves, as seen in column four. Calves born during the second half of the calving season are lighter and bring fewer total dollars per head. The total reduced revenue of the less fertile beef cows was US$4 770/N$76 151 ($35,145 - $30,375). Producers who can move their cowherds to a 60-day breeding season without incurring higher numbers of open cows can recover the US$4 770/N$76 151 annually. However, many producers will incur open cows in making the move to a shorter breeding season. While shortening the breeding season will take time to achieve, there can be significant economic incentive for producers to reduce the length of the breeding/calving season.

Conclusion

Producers cannot completely control infertility in their cowherds. However, understanding and addressing the factors that affect infertility will help producers implement management practices that can improve fertility and reduce the negative impacts of infertility on the profitability of beef cow-calf operations. By making small changes within individual beef cattle operations, cattle producers can improve fertility and profitability.

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