SOUTH AFRICA | NAMIBIA | ZIMBABWE

LRF-TS news

JANUARY 2022

Beef's Massive Opportunity

A 'Heads Up' for beef producers in Southern Africa makes for an exciting future in this thriving industry.

Never in the history of South African cattle farming has the red-meat industry had greater clarity on what needs to be done to get the entire red-meat value chain profitable – from the producer to the feedlot and finally the abattoir. And make no mistake, the situation is rather dire.

According to the Bureau for Food and Agricultural Policy (BFAP) the South African weaner-calf price has been declining in real terms over the past few years when inflation is factored in. That despite the heartening and ongoing growth in the value of our beef exports, despite the damage caused by recent foot-and-mouth outbreaks. Is it any wonder then that beef famers are currently struggling to make a profit in the face of steadily increasing input prices?

This stark reality facing our cattle farmers was stripped of all its pretentions at the recent Aldam Stockman's School, hosted in the Free State, and arguably the leading livestock event in the country.

This become abundantly clear once the world's most influential beef exporters started sharing their stories. The Brazilians described their massive export industry, annually

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disgorging millions of tons of relatively cheap beef onto the world market. Exporting a significant 20% of their beef production, it's double what the United States manages at 10% of production, and far ahead of the 4% of production that South Africa currently exports.

But the All Blacks of global meat-exporters remain the Australians. Their diversified, nuanced and utterly profitable marketing approach includes the full ambit of export opportunities - from live exports of scrub cattle to the targeted sale of high-value primal cuts to destinations like China and the Middle East where consumers are prepared to pay top dollar.

Heading up this exemplary effort is Meat Livestock Australia, an independent industry body that concerns itself not only with the profitability of farmers, but rather the entire red-meat value chain, giving everyone a vested interest in making the whole system work.

The result of this focussed marketing? Australians today achieve an average of R103/kg per carcass, (South Africa's average is a modest R53/kg), following a blistering 72% surge in Australian beef prices. Compare that to for instance Namibia's impressive, but still comparatively modest 27% growth in beef prices.

For South Africans the reality remains that Namibia's respectable beef exports are based on their ability to sensibly manage a national traceability system, something which still eludes South Africa. In a rather ironic twist of fate, Namibia has managed to achieve their success with almost identical legislation to that of South Africa - a historic legacy of the days when South African managed the-then South West Africa protectorate.

Today Namibia's Meat Board remains a historical echo of our now dismantled single-channel marketing boards, but has transformed into something more akin to the Australian MLA – an independent industry body playing a critical facilitation role across the country's entire beef value chain. As the leading Namibian beef farmer Mecki Schneider puts it: "the system won't work if every link in the value chain doesn't make money!" It's as simple as that.

But you also need money to make money, and like Australia, Namibia funds its beef industry with a levy of R70 per animal. Our levy comes in at a miserly R11 per animal. Compared to other South African farming sectors like deciduous fruit, that reinvest 1,4% of the value if their product back into their industry, our beef industry only manages to reinvest a dismal 0,09% of the value of its product. It's a contribution also considerably less than the South African average of 0.5% across all farming sectors.

It's only by funding itself properly that the beef industry will put itself in a position to adequately address its biggest challenges like the health of the national herd (the current lack of critical livestock vaccines is also of course completely untenable!). If it can then still further grow beef exports to 20% of national production, BFAP estimates that an astonishing additional R8,3 billion can be generated across the beef value chain, with an estimated increase of R15 per kilogram per A2/3 carcass!

If we don't do it, and the industry loses further traction as far as exports and animal-health issues are concerned, we stare the dismal prospect in the face of a catastrophic reduction of up to R4 000 per A2 carcass. With the plan already penned, and our statutory levy coming up for reconsideration shortly, we simply can't afford to let this wonderful and enormous opportunity slip through our fingers!

BY CHRIS BURGESS - EDITOR LANDBOUWEEKBLAD

Beef School Zimbabwe 2021

Four hundred and fifteen people attended the ZHB Beef School and LRF Virtual Stockman School in southern Africa. In Zimbabwe, 59 people attended the Beef School in person and 21 by virtual link.

The Zimbabwean event was well supported by service providers. National Foods Limited was the prime sponsor once again and the company also sponsored the first ZHB Fertility Award won by Lianne Herbst. Other sponsors included Windmill, Surrey, Profeeds, Coopers, Feedmix and Polachem.

Local, regional, and international presentations covered a very wide range of topics including the beef market (with presentations from SA, Namibia, Australia, USA and Brazil); grazing management; animal health (including a presentation on Theileriosis), genetics (with a presentation on optimum cow size) and the role and importance of industry support structures. The presentations generated a lot of discussions and many pertinent take-home points.

Zimbabwe Herd Book Awards 2021

At the Beef School held earlier this month, the Herd Book presented its Awards for the first time. Three categories were chosen: Housekeeping, Performance Recorded and Fertility. Zimbabwe Herd Book extends sincere congratulations to the following recipients:

Housekeeping Awards

Gold: 1st Place Lorna Joubert, Luipaardsvlei Brahman

Silver: 2nd Place Philip Reed, Anivai Tuli and Reed Brahman

Bronze: 3rd Place Irene Belinski Bell, Inn Droughtmaster

Completeness of Performance Recording Awards

Tuli - Oscar Johnson, Jambo Tuli Stud, 4.5 Star Rating

Brahman – Dr Themba Dlodlo, Nguni Brahman Stud, 4.0 Star Rating

Fertility Awards

1st 160 cows, AFC 32, ICP 391 Lianne Herbst, Herbst Simbrahs

2nd 12 cows, AFC 35, ICP 403 Wayne Greaves, Enondo Brahmans

3rd 38 cows, AFC 35, ICP 404 Dr Themba Dlodlo, Nguni Brahmans

National Foods Limited proudly sponsored a prize of five tonnes of feed for 1st place Fertility Award.

Herbst Simbrahs- 1st Place Fertility Award.

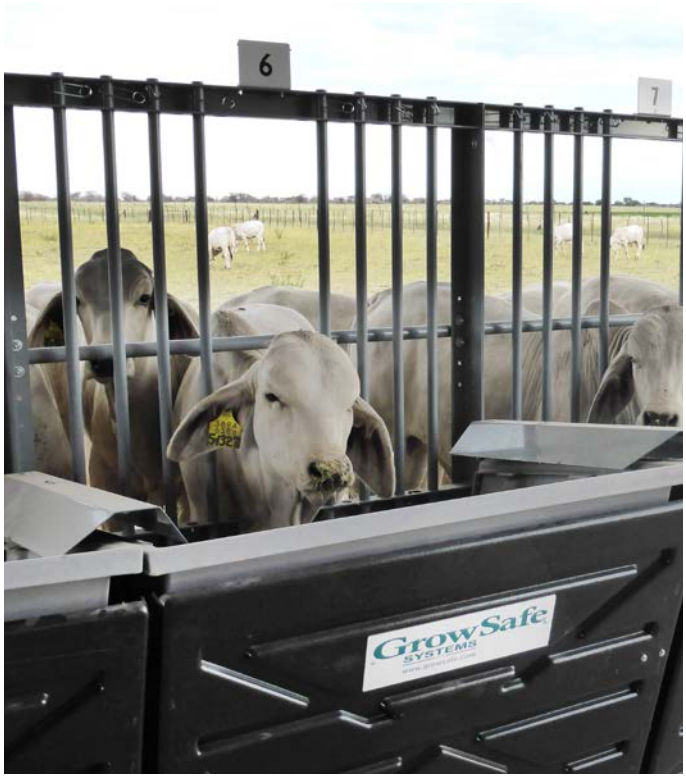
Kickstart for LRF Societies to Build their Genomic Reference Populations

The long-term goal of all the LRF breeds, with the collection of SNP test results, is to include it (when there is enough) in their BREEDPLAN genetic evaluations. Currently, without the inclusion of genomic information, BREEDPLAN uses the pedigree and performance data (animal's own measurement for a specific trait as well as the performance of its progeny in the same trait) to calculate breeding values for the animals. With a genomic or single step genetic evaluation, the genomic/ SNP information along with the pedigree and performance information is used in a single step to calculate a genomic breeding value (GEBV). BREEDPLAN has installed genomic databases for the BREEDPLAN breeds in South Africa as well as for the Namibian Brahman, where SNP results can be stored at the societies so that it is available when there is enough information to calculate GEBVs.

Before breeds can move over to a single-step genetic evaluation, a reference population is needed. A reference population consists of thousands of animals that have both phenotypes or measurements for the traits of interest as well as a genotype or SNP profile. It is important that a reference population represents the entire genetic pool of a breed. Consequently, animals performing good, bad and average in a specific trait should be included in the reference population. It is also important that breeders continue to build on the reference population by means of continuous performance testing and submission of data. If this is not to be done, the next generation of animals will be too far genetically removed from the reference population and will therefore no longer benefit from the use of genomic selection. Also, if a particular breeder or herd wants to benefit from genomic selection, his herd will have to contribute to the reference population, or his herd will have to be genetically related to the animals in the reference population.

The main benefit of calculating genomic breeding values (GEBVs) is the increase in the accuracy of the breeding values calculated for the following:

- Young animals or even embryos that do not yet have their own measurements or any measured offspring for a trait of interest.
- Traits that are difficult to measure or expensive to measure, e.g., RFI
- Traits that are only measured in one sex, e.g., Days to Calving



Feed efficiency testing of young registered bulls at GenTecSol, near Hochfeld in Namibia, with a GrowSafe system.

- Traits that can only be measured on dead animals, e.g., Abattoir carcass traits
- Animals measured in single animal contemporary groups

The accuracy of an EBV gives an indication of the amount of information used to calculate that EBV. The higher the accuracy, the higher the probability that the EBV is a good prediction of the animal's true breeding value and the lower the likelihood that changes in the animal's EBV will occur as more information for that animal, its offspring or its related animals become available. With genomic breeding values, animals at birth are expected to have more or less the same accuracy for a specific breeding value than animals with ± 10 measured progeny in a traditional BLUP genetic evaluation. However, this will only be the case if the breed's reference population is large enough and well-structured. Breeders will be able to select animals, at a very early age, with reasonable accuracy, as parents for the next generation. Consequently, genetic progress can occur much faster. Breeders will also be able to decide at an early age, at birth or even as embryos, whether it is worth keeping a specific animal in his herd and whether the animal will be profitable. The

genomic information of animals is therefore very valuable and must be protected.

The great benefit of GEBVs, however, is not seen in traits for which we already have accurate breeding values, for example the growth traits, but it is seen in the difficult-to-measure traits such as fertility, feed efficiency, carcass and meat quality. It is also very important to realize that genomics will never substitute performance testing. On the contrary, it makes taking performance data even more important, especially for the difficult-to-measure traits. It only serves as additional information to calculate more accurate breeding values for animals at an earlier age. The work you as breeders do, to performance test your animals will be critical to the success of genomics in the future.

To kickstart the move from the old microsatellite markers to SNP markers, the LRF has negotiated a once-off deal with Neogen (One of the world's leading DNA testing laboratories). The deal includes the following:

- To genotype between 1500 and 3500 (or more) animals at a once-off reduced cost that is valid until March 2022. Thereafter, all SNP tests will again be subject to the normal pricing structure.
- Neogen is prepared to genotype pedigree animals, sires and dams of calves, as well as other influential animals at a lower cost. These animals exclude current calves.
- Samples must be sent to Neogen by March 2022.
- Cost: R370 (excl. VAT) per sample.
- This cost excludes the cost of the hair card. Samples submitted to Neogen should either be a hair sample, placed in a hair card or a Tissue sampling unit (TSU). Hair cards will be available at your society office.
- This price includes the standard batch of defects, as agreed with society.
- Some societies further subsidize this cost to encourage the transition from microsatellites to SNPs. For more information on this. Please contact your breed society.

All other animals will be tested at a cost of R620 (excluding VAT), these costs exclude the genetic defects. The genetic defects can be tested at an additional cost, as previously agreed with your society.

For more information, please contact your breed society.

BY IZAAN DU PLOOY

Brahman bull with exceptional performance data.

The Lowdown on Longevity

One question that is asked regularly is why the BREEDPLAN analysis does not include a Longevity EBV. The primary reason for the absence of this EBV is a lack of data of sufficient quality. There are also some questions as to whether a single Longevity EBV is the best approach to measure the productive life of beef cattle. This article aims to discuss these points whilst also encouraging greater recording of the relevant data.

The merits of increasing longevity in cattle production are obvious. Increasing the longevity of cows means that they remain in the herd for longer. This allows the number of replacement heifers to be reduced, leading to lower replacement costs and increased income as more heifers are available for sale. Older cows also tend to have higher rebreeding rates, less calving difficulty and be better mothers in general (including maternal behaviour and milk production). Bull replacement costs will also be reduced if bulls are retained to older ages. Partially offsetting these gains is the loss in potential genetic progress as the average age of cows and/or bulls gets older (increasing generation interval), though this will be more apparent in seedstock than commercial herds. The loss in potential genetic progress occurs where older cows and bulls are retained at the expense of younger replacements with superior genetics (assuming genetic progress is being made in the herd).

Recording of Longevity Data

Since 2013, BREEDPLAN has enabled the recording of female disposal information via the Days to Calving (DtC) data submissions (Excel templates and BREEDPLAN compatible herd recording computer programs). Utilising the DtC data submission system was preferred as both traits require the date and reason for cow disposal. Research at the time found that the existing cow disposal data provided to the breed societies via cow inventories was insufficient due to the lack of detail on the reasons why individual cows were disposed. These reasons are important to determine whether the reason for cow disposal had a genetic basis or not (e.g. if removed due to performance or due to injury). More detail about recording female disposal data can be found in the 'Recording Days to Calving Information' tip sheet, available via the Help Centre on the BREEDPLAN website. This can be found by typing 'Longevity' into the Help Centre search.

Before an EBV for a new trait can be published, genetic evaluation systems such as BREEDPLAN require thousands of records to determine the trait's genetic architecture. This genetic architecture includes calculating how much of the variation in the new trait is due to genetics (heritability) and the relationship with other traits in the analysis. To date, insufficient

animal disposal data has been submitted to allow the calculation of a Longevity EBV in BREEDPLAN.

There are also some risks involved with the recording of and selection based on longevity data. The first is where bull breeding herds have different selection criteria to the commercial herds that ultimately use the bulls. For instance, most bull breeding herds will have access to more records, be it parentage, genetic conditions and/or EBVs, and these will influence the decisions made to keep a cow or not. Thus the criteria used to determine whether a cow is retained, will be different in seedstock herds as opposed to commercial herds. This will reduce the value in commercial herds of a longevity trait that is defined in seedstock herds under different selection criteria. Additionally, a Longevity EBV may promote recording and selection practices that could be detrimental, e.g., if herds retained older cows in order to record how long they remain productive. This approach reduces the genetic progress possible across all traits as the number of genetically superior (assuming genetic progress is being made) younger animals coming into their herd is reduced. The genetic diversity of the herd will also be reduced due to the presence of more siblings and parent offspring pairs, which in turn further reduces the potential genetic progress and increases the inbreeding in the herd.

Selection on a single Longevity trait versus component traits

When one considers the longevity of cows and bulls in a herd, there are a number of traits that contribute to when these animals leave the herd. Most longevity style EBVs/EPDs have identified that the failure of a cow to get pregnant is the leading cause of cows leaving a herd, while other traits that affect longevity of both cows and bulls include structural failure, temperament,

health, calf performance, body condition and/or age. The multi-faceted composition of longevity raises questions about whether it would be better to select directly on the component traits than on the composite trait that is longevity. There are BREEDPLAN EBVs available for some of these component traits in breeds with sufficient data collected and, for those where access to these EBVs is not yet available, phenotypic selection (based on visual appraisal) is also possible, although less effective.

Selecting on a composite trait like longevity, rather than on its individual component traits, has a number of downsides. The first issue is control. Direct selection allows the emphasis to be applied directly to the component traits that are causing issues in your and/or your bull buying clients' herds. For example, if the major cause of cows being removed from the herd is due to them not rearing a calf every year, then it is logical to put more selection pressure directly on fertility (e.g. via the Days to Calving EBV) and/or ease of calving traits (e.g. via the Calving Ease EBVs). If bull structural failure is an issue, then more emphasis should be placed on the Structural Soundness EBVs if available, or structural scoring/visual appraisal if these EBVs are not currently available for your breed.

The more traits that underpin a composite EBV, such as longevity, the higher the chance that selection for improvement in one component may lead to other component traits moving in the wrong direction. The presence of antagonisms between the component traits will decrease the heritability of the longevity trait, which in turn decreases the selection response possible for longevity. This is likely why international studies of longevity style traits have found they have heritabilities of around 0.1, which is similar to the heritability of the Days to Calving trait (one of the lowlier heritable BREEDPLAN traits). A comparison of longevity and Days to Calving is made more valid given the key role of fertility in determining cow longevity. Furthermore, antagonistic interactions may also exist between longevity and existing BREEDPLAN EBVs. This demonstrates why it is important to know the genetic architecture of the longevity trait before such an EBV is released to the industry.

BREEDPLAN CODES USED TO RECORD FEMALE DISPOSAL INFORMATION

The codes that are used to record a female disposal event in Days to Calving data submissions can be found in the 'Recording Days to Calving Information' tip sheet, available via the Help Centre on the BREEDPLAN website. Some commonly used female disposal codes are:

A - Cast for age
C - Calving incident (e.g. dystocia, prolapsed etc.)
D - Disease (e.g. pesti, eye cancer etc.)
F - Not in calf (i.e. failed preg test or did not calve)
J - Cull unjoined heifer surplus to requirements
P - Poor performance (e.g. poor milking, low body condition etc.)
Q - Appearance (type, colour, markings, Society standards etc.)
S - Structural problem (e.g. feet, legs, navel etc.)
T - Poor temperament
W - Calved but failed to rear calf to weaning
Y - Unknown cause
Z - Accident (e.g. injury, drowned, poisoned etc.)

Although BREEDPLAN does not currently have a Longevity EBV available, the relationships between the trait, its component traits and existing EBVs are modelled within the BreedObject software. As such, the resulting BreedObject selection indexes account for longevity through correlated traits (e.g. fertility). Therefore, when beef producers use these selection indexes as part of an animal selection strategy (see article on page 12), longevity is factored in.

Summary

This article demonstrates the importance of, and how to record, female disposal information to enable research into a Longevity EBV for BREEDPLAN. Specifically, the importance of recording the reason why an animal was culled or died is highlighted. One of the benefits of evaluating longevity as a single trait is that it only requires the recording of a single data record, which contrasts with the need to collect data for each of the component traits (e.g. fertility, structural soundness etc.) separately. The cost of only recording a single longevity trait is the loss of control and loss of selection accuracy over which specific component traits are being improved. EBV selection for most longevity component traits is already possible via BREEDPLAN for breeds that have collected and submitted sufficient data for these traits. Phenotypic selection is also an option, although less accurate, for those that do not yet have access to all of the longevity component trait EBVs.

NEWS FROM SOUTH AFRICA - A LOOK BACK AT 2021

At the end of each year, we look back and see what we have achieved. If we look at what the LRF itself and its affiliated members have achieved, there are several things that come to mind, a few of which we would like to highlight. Thank you very much for your support throughout 2021, we look forward to working with you all in 2022.

Implementation of ILROnline

One of ABRI's newest developments is the ILROnline software program, which allows breeders to have direct access to their animals and performance data, as recorded on the society database.

Breeders will have the opportunity to register their own animals, submit performance data, transfer and dispose of animals, etc. all directly on the society database with the necessary data checks in place. In addition, breeders will have access to all previously recorded data on animals, which will allow them to immediately see where their data recording is lacking.

As data recording is the responsibility of the breeder, breeders now have an extra tool to ease data recording and to ensure that all data is recorded correct and complete on the society database.

ILROnline has been implemented for most of the South African societies. Some of the affiliated members/societies have started with a rollout proposal to their members. For more information, please contact your breed society.

LRF RTU Scanning Services

In April 2021 the LRF bought its own RTU scanning machine and by May, had trained some operators. One of the operators has been busy scanning the first herds. In August we made history when the first herd was scanned in Zimbabwe.

High correlations exist between the carcass traits scanned on live animals and those traits measured on physical carcasses. Hence it becomes a very handy tool to accumulate phenotypic data on carcass traits for all your live animals in your herd, which can be included in the carcass traits EBV calculations, available for most of our breeds.

The LRF would like to expand these services in 2022, and scan more animals, especially during the March to June period, when cattle are in a good condition.

If you want to make use of these services next year, please see the information below.

DNA Society Pipelines

The LRF facilitated the implementation of DNA modules for the societies. This allows the societies to handle laboratory requests from breeders through them, which is then send to the different laboratories. The society can then supply an additional DNA testing service to its members and allow societies to store SNP results on the society database.

With the implementation of the society DNA pipelines, the LRF societies were able to negotiate with the laboratories for bulk discounts. For more information on these SNP testing offers, please contact your society office.

NFI EBVs for Brahman & Simmentaler

Feed efficiency is becoming increasingly important to beef cattle breeders, as feed costs remain the number one expense for beef production. To remain competitive with other protein sources, beef producers will have to address the issue of feed efficiency. Over the past few years, more and more breeders have sent bulls for testing at Net Feed Intake testing stations across South Africa and to the testing station in Namibia, GenTecSol.

This data along with some historic phase C testing data allowed BREEDPLAN to calculate NFI EBVs for both the Brahman and Simmentaler breeds in Southern Africa. This was a big milestone reached, as these are the only two breeds in Southern Africa that currently have NFI EBVs. To increase the accuracies of these EBVs, breeders should continue testing their animals. More data is needed for the other breeds to turn on their NFI EBVs. The LRF encourages breeders to send their animals for testing at these various NFI testing stations.

NEWS FROM SOUTH AFRICA - A LOOK BACK AT 2021

Breed Specific Modular Courses

The Covid-19 pandemic has forced the LRF to change the way we do training courses. In 2020, the LRF held various online courses via Zoom with great attendance. In 2021, the LRF was approached by some of the societies to have more breed specific online modular courses. At the beginning of this year, a plan was set out to have different courses on various topics throughout the year. These courses were very well received by breeders, and we look forward to having more of these courses in 2022. Breed societies are welcome to contact the LRF office if they want to have similar courses for their breeders next year. Recordings of these modular courses can be accessed via the LRF YouTube channel: https://www.youtube.com/channel/UC90xjIpVcsU_Az34_NBMaNg

Information Days in Namibia and Zimbabwe

As the Covid-19 restrictions were lowered, the LRF staff were able to travel more. It was a great pleasure for Mrs Izaan du Plooy to attend an information day on the 19th of October in Windhoek, Namibia. This day was organized by the Namibian Brahman Association and was open to breeders from all societies to attended. The day was very well attended, both physically and virtually.

Mrs du Plooy and Mr Mecki Schneider (Chairman of the LRF) also had the privilege to visit Zimbabwe where they were involved in two BREEDPLAN information days, one in Bulawayo and the other in Harare. We also had the pleasure of visiting three cattle farms. Thank you very much to all the breeders and other people involved which made this a very pleasant visit to Zimbabwe. See you again soon.

BY DR MICHAEL BRADFIELD - CEO LRF

Get Social with LRF-TS

Social Media Links

Beef producers can keep up to date with the latest developments in genetic technologies and the activities of the LRF by following the LRF on Facebook, Twitter and YouTube.
Articles and information on upcoming events (e.g. training sessions, module courses) are routinely posted on Facebook and Twitter. The LRF has two YouTube channels: one for the LRF that contains video presentations from past modular courses and training sessions and the HerdMASTER channel that contains short videos and training videos on the use of HerdMASTER.

LRF

To follow LRF on Twitter, Facebook or YouTube simply go to the LRF website and click on the relevant icons, or go directly to the LRF Facebook account.

Facebook: https://web.facebook.com/HerdmasterBreedplan/
Twitter: twitter.com/LivestockLrf
Instagram: livestock-registering-federation/ or their website: www.lrf.co.za
HerdMASTER YouTube Channel: https://www.youtube.com/channel/UCAP8pg8yo0cEVmDngXXGVLw
LRF YouTube Channel at https://www.youtube.com/channel/UC90xjIpVcsU_Az34_NBMaNg

ZHB

Visit the ZHB website for more information: **www.livestockzimbabwe.com**

SBTS & TBTS

(Technical Services for BREEDPLAN Australia)
To follow SBTS and TBTS on Twitter, Facebook or YouTube visit the SBTS & TBTS Facebook account at **facebook.com/SBTSTBTS**, Twitter account at **twitter.com/SBTSTBTS** or YouTube Channel at **youtube.com/user/sbtstbts**

BREEDPLAN Top Tips: Collecting Samples for DNA Testing

There are several different sample types that you can collect on your animals for DNA testing purposes. While you should choose the most convenient for your individual circumstances, be aware that some sample types can only be collected once an animal reaches a certain age. In general:

- Tissue sampling units (TSUs) can be used from birth onwards. TSUs allow beef producers to collect an ear plug sample from their animals using a specialised applicator gun. TSUs are often collected in conjunction with calf tagging and have a unique barcode system that can be linked to the animal ID tags (including RFID tags). This barcoding system, along with machine processing, means that sample mix-ups are less likely than for other sample types. TSUs can be shipped at room temperature; however, once the tissue samples have been collected, TSUs are not suitable for long term storage in a home environment. It can however be frozen.
- Hair samples can be collected once animals are aged 60 days or older. Hair samples are collected by pulling approximately 40 hairs from the tail switch of an animal. These hairs should be clean (i.e. free from any foreign matter such as manure) and dry. As the DNA is contained in the root bulb, it is important that hair samples are pulled rather than cut. Collecting hair samples from calves younger than 60 days of age is not recommended as the hair roots are still developing. Instead, hair samples are commonly collected at marking and/or weaning. Hair samples are also suitable for long term storage at room temperature. The LRF highly recommend the use of hair cards (rather than envelopes) for the collection of hair samples, as the risk for contamination is reduced.
- Semen samples can be collected from mature bulls. While other sample types can be collected when bulls are still immature, one advantage of a semen sample is that it can be used to procure DNA when the physical animal is not readily available (e.g. overseas and/or deceased sires). Semen straws should be thawed prior to postage; however, they should not be left to sit at room temperature for prolonged periods of time. Semen straws should also be protected to prevent damage while in transit; placing each straw inside an empty pen is a good option. If sending multiple straws, each should be placed into a separate sealed plastic bag to prevent contamination of all straws should one break in the post. Please note that only unopened semen straws can be processed.

No matter the sample type you decide to use for DNA testing, remember that it will take time for the samples to be processed by the genotype service provider and for results (i.e. parentage and/or genetic conditions) to be returned for you. Ensure that you allow enough processing time if the result from the laboratory test is needed for sale catalogues etc. It is best to send samples to the laboratory a few months before a sale. This gives you some leeway in case resampling is required.

BY IZAAN DUPLOOY

Tissue sampling units (TSUs), pictured, can be used to collect DNA samples.

Continued progress with International Brahman Genetic Evaluation

In 2016 the world Brahman Federation members throughout the world, including the Brazilian, Uruguayan and Columbian Brahman Associations met for the first time in Rockhampton. I remember Dr Brad Crook and myself giving a talk at the conference, Brad had done some work on a possible Genetic evaluation that included Australia, South Africa, Namibia and the USA. The presentations were well received. Mecki Schneider, chairman of the newly formed World Brahman Technical Forum even wrote a memorandum of understanding between the various associations.

The meeting developed a MOU that agreed on the principles of a combined genetic evaluation but went further and agreed on the sharing and exchange of SNP's. Changes in personnel, especially a change of CEOs in Australia and the USA slowed down the process and essentially brought it to a standstill. During a discussion between myself and the current Australian CEO, Anastasia Fanning in Armidale in 2017, we agreed to keep the process going. Mecki and I phoned Dr Joe Mask, the Breed CEO of the USA Brahman Society. After some deliberation, the USA have been prepared to share their data to enable Brad Crook to again run a combined evaluation.

Brad has also decided to re-do the evaluation starting with the growth traits. Good news is that Zimbabwe is now also included in the Southern African evaluation. The next step will be to ensure that the five Societies/Associations collaborate in a more formal way for the evaluation to be sustainable.

Other South African Societies running international evaluations include the Limousin that has been run between South Africa, Namibia, Australia and New Zealand for nearly a decade. The Namibian Hereford is included in an international Genomic evaluation that includes Namibia, Australia and New Zealand and will hopefully be extended to include Uruguay, the UK and Argentina in the near future.

With a combined evaluation there are only winners. Societies with little data for one trait such as birth weight, have another Society that collects this data prodigiously. All animals can be ranked fairly across countries if the genetic linkage is strong enough and the accuracy of the EBV is increased because all information on a bull for example is included into the evaluation.

Some discussion needs to happen as to the best way to progress these evaluations. Firstly, societies must agree to a genetic evaluation. Frequent change of Chairman at AGM's often makes this difficult as it is left to the Society CEO/new Chairman to push the program forward. Secondly Society CEO's/Chairmen are often under pressure to keep the finances under control and grow animal/membership numbers. A combined evaluation is often not high on their priority list.

DR MICHAEL BRADFIELD - CEO LRF

World Brahman members attending a World Brahman Forum meeting in Rockhampton with Mecki Schneider as Chairman.

NEWS FROM ZIMBABWE - ANIMAL BREEDERS COURSE NOVEMBER 2021

ZHB, an affiliated member of the Livestock Registering Federation (LRF), were very privileged to have Mecki Schneider (Chairman of LRF and owner of OKABRA Brahman Stud & OKASIM Simmental Stud, Namibia) and Izaan du Plooy (LRF-Technical Officer, South Africa) visit Zimbabwe and hold Animal Breeding Courses in Harare and Bulawayo.

Mecki and Izaan flew into Bulawayo on Tuesday, where they visited "Ruvale Brahmans" owned by the Pillosoff brothers and 'Nguni Brahmans owned by Dr T.S Dlodlo. Jeff Sommer of "Rhoman Brahmans" and Kerry Stewart from the "LZ Tuli Stud" were great hosts and our visitors got to taste the finest Steak and Biltong that Bulawayo had to offer.

The courses (Wednesday in Bulawayo and Friday in Harare) were open to anyone interested in Cattle Breeding both at Stud, Commercial and Small-Scale level.

Following a brief introduction and updates from ZHB and LRF, Izaan gave us an Introduction to Animal Breeding including Heritability, Calculation of EBV's, Correlations between traits, Accuracy and Selection Index development. After tea Mecki gave us a more practical angle on the importance of good recording practices and Izaan addressed the issues of recording the difficult but economically important traits. Lunch was followed by Mecki addressing the challenges of profitable livestock farming with his personal experiences of putting Science and Technology into practice. Izaan finished off the day with a brief look into Genomics.

On our drive up to Harare from Bulawayo we stopped in with Phil Reed who runs the Anivai Tuli Stud and Reed Brahmans.

"Nguni Brahmans" Dr T Dlodlo. Mecki Schneider, Izaan du Plooy

Not to be outdone our visitors got to sample Biltong from the Midlands but there wasn't time for a Steak as we had to outrun some nasty weather including a multitude of hailstorms. They did however get to sample Steak and Biltong from some of Harare's finest outlets. By now I was becoming concerned that our guests might be thinking that Biltong and Steak had replaced Sadza as Zimbabwe's new Staple!

The courses went very well attended by 39 participants in Bulawayo and 48 in Harare. Some of the highlights of the day were the face-to-face interaction and discussions between farmers and the technical advisors. While zoom and other platforms have been life savers during the Pandemic, nothing beats meeting in person and many, many thanks go to Mecki and Izaan for making the effort to get up to Zimbabwe and taking the time out of their busy schedules.

BY ANNE COOKE - VICE CHAIRMAN ZHB

Mecki explaining the importance of data capture "Ruvale Brahmans".

Ultrasound Scanning, a First for Zimbabwe and Other Southern African Developments

Scanning was introduced into South Africa and Namibia by Dr Matt Wolcott in 2012-2013. Matt, as he is known to us Southern Africans drove around the country from producer to producer on several trips with a hired Golf car. He would start at the crack of dawn and finish late in the evenings. Matt also held numerous training sessions in both Namibia and South Africa. For some or other reason it took a while for South African and Namibian producers to get used to this new technology and Southern Africa will forever remain endowed to Matt for his selfless contribution to the Southern African livestock industry.

The LRF has and will continue to encourage members to use the services of the ARC. However, we have now purchased our own scanner, as reported elsewhere, to service those members for whom a RTU scanning services is a challenge. We also held a two-day training session at Sernick feedlot in May where 6 trainees were trained. After meeting Doug Follwell in Namibia in June this year Doug expressed a keen interest for someone to scan some of his cattle in Zimbabwe. At this stage Nandi Wessels was the most experienced having done many cattle in some Growsafe facilities and also scanning on a number of farms in South Africa. Though Nandi was able to scan Doug Follwell's whole Tuli Stud producers are encouraged to scan cattle that are between 300 - 800 days old. Whilst it's important to scan the bulls, geneticists in fact obtain valuable information from the heifers where there is often a lot more variation, especially for fat depth and marbling.

We will hopefully hold an exhibition and producer day in Zimbabwe that will be arranged by the Zimbabwean Herd Book (ZHB).

Doug says that going forward he will be able to make a more informed decision for future breeding. He has also learnt that this is data that one cannot gather with the naked eye and that this technology will be invaluable in selecting for carcass and meat quality going forward. "An ordinary looking bull may easily outperform one's most appealing visually selected bull" says Doug

NTUNTENI TULI STUD STAFF & NANDI

NSBA NEWS UPDATE

The year 2021 is fast drawing to a close. It was a year with highs, and some serious lows. It started off with, for most of Namibia, a good raining season. The exception was the Western and far Southern parts of the country. This brought about a vibe of positivity within the farming, and stud breeding communities. It was further assisted by better weaner calf prices, and an increase of prices at the stud auctions. However Namibian farmers suffered tremendously under uncontrolled veld fires during the second half of 2021

The cloud of Covid-19 however remained with us, and the staff was forced to work from home for a period of 11 weeks. Although many members of the NSBA contracted Covid-19 during 2020, nobody passed away due to the pandemic. Unfortunately, the same cannot be said for 2021. A total of 16 breeders passed away due to Covid-19, and many families were affected by deaths in the family. The Chairman of the NSBA Board; Mr. Ryno van der Merwe is still recovering and we are grateful that he is on the mend and our thoughts are with him.

Although the BGP Phase 2, did not get off the ground, as originally planned, the participants from the participating breeds; Brahman, Braunvieh and Santa Gertrudis, have continued submitting their data. Of the three, only the Brahman breeders have entered bulls into the GenTecSol NFI Testing Centre. Since the opening of the Centre during June 2016, a total of 1 278 bulls have completed the test. A number of these bulls have already produced offspring that have completed the test as well. A total of 1 801 bulls; Brahman, Braunvieh, Beefmaster, Boran, Hereford, Simmentaler and Simbra, have completed the test. The next test is ending on the 14 December 2021.

The deal that the LRF brokered with Neogen, regarding a once-off special price for genotyping, to assist those breeds that are closest to achieving their goal of receiving g-EBV's, has inspired those breeds to buy in. The Namibian Brahman will submit between 220 and 400 samples, the Namibian Wagyu approximately 200 and the Hereford 30 samples. The Hereford in Namibia is part of the international Single-Step AnalysIS for Herefords. Their data is used in the analysis, but they currently do not receive g-EBV's, due to insufficient number of genotypes. After this round of genotyping, they should be there. One of the herds, with 120 animals genotyped already, plays a kingpin role, as it is a linkage herd for Namibian, South African, American, Canadian, and Australian genetics.

Five breeds; the Beefmaster, Braunvieh, Hereford, Limousin and Santa Gertrudis form part of a larger research project between the University of the Orange Free State, a large private feedlot in South Africa and ABRI. Through this project, a sponsorship was received that assisted these breeds in getting their genotyping programmes of the ground.

The NSBA wishes all the members of the LRF a Blessed Christmas, a Prosperous New Year and an abundant raining season. Enjoy the festive period.

JACQUE ELS - MANAGER: NSBA

Cattle near Kombat in Namibia - stud cattle running with commercial cattle. Sale bulls in the veld.

New Selection Index Documentation Released

In recent months, the SBTS & TBTS extension team, in conjunction with BREEDPLAN staff, have reviewed the BREEDPLAN tip sheets relating to selection indexes. A number of new tip sheets, both general and breed specific, are now available in the Help Centre on the BREEDPLAN website.

The general selection index tip sheets are:

1. **An Introduction to Selection Indexes**

   This tip sheet introduces BreedObject selection indexes, outlines what selection indexes are available, and explains how to interpret selection indexes. It also provides a brief guide to using selection indexes in animal selection.

2. **A BREEDPLAN Guide to Animal Selection**

   This tip sheet provides a detailed best practice guide to using BREEEDPLAN information, alongside other selection tools, for animal selection. Advice on pre-sale preparation for bull buyers is also provided.

Two breed specific tip sheets are also available and replace the previous 'Interpreting Breed Selection Indexes' tip sheet. These are:

1. **Using Breed Selection Indexes**

   This tip sheet provides you and your commercial clients with a reference guide to assist in the identification of the most relevant selection index for your (or your clients) production system(s). This tip sheet includes an overview of the available breed society selection indexes and a guide to using these in animal selection.

A BREEDPLAN GUIDE TO ANIMAL SELECTION

BREEDPLAN recommends using selection indexes (where available) as part of a selection strategy which also includes other selection tools (e.g. EBVs and visual assessment). By initially ranking animals using an appropriate selection index, beef producers ensure balanced selection for traits important to their production system. The BREEDPLAN best practice guide to animal selection is to:

1. Identify the selection index of most relevance to you.
2. Rank animals using the chosen selection index.
3. Consider the individual EBVs of importance.
4. Consider other traits of importance.

For further information, please see the 'A BREEDPLAN Guide to Animal Selection' tip sheet, available via the Help Centre on the BREEDPLAN website.

2. **Breed Selection Indexes: Technical Specifications**

   This tip sheet has been designed for those of you who wish to gain a deeper understanding of the technical specifications for each of the available selection indexes. This tip sheet provides an overview of the BreedObject selection index development process. The blue profit driver graph, the red EBV weightings graph and the green predicted response graph for each selection index, as were available in the previous 'Interpreting Breed Selection Index' tip sheets, can also be found here.

We encourage you to consider sharing these new selection index tip sheets with your commercial bull buying clients, particularly the 'A BREEDPLAN Guide to Animal Selection' and the relevant 'Using Breed Selection Indexes' tip sheets. You are welcome to link to these tip sheets via your own websites and/or social media sites. You may also wish to reference these tip sheets in your sale catalogues. If doing so, it is recommended that you link directly to the version located on the BREEDPLAN website, rather than host a local copy on your own server. This will ensure that any future updates to the tip sheets are automatically captured.

Professor Steve Miller is the New Boss at the Animal Genetic and Breeding Unit (AGBU) in Armidale

South African Societies sign their agreements with ABRI, with the support service provided by the LRF. The research entity that develops the BREEDPLAN or BREEDOBJECT Index system is the Animal Genetic and Breeding Unit (AGBU). AGBU was established in 1976 and is an unincorporated joint venture between the University of New England and the State of New South Wales Department of Primary Industries. AGBU grew from two scientists, one extension specialist and one secretary under the leadership of Dr Keith Hammond in 1976 to a team of over 20 scientists, 5 postgraduate students and 6 support staff today.

AGBU has an excellent international reputation and an active program of visiting scientists. The products developed and supported by AGBU are used around the world and include BREEDPLAN, TREEPLAN, PIGBLUP, BREEDOBJECT, LAMBPLAN and MERINO SELECT AND SHEEP GENETICS. The beef programs are distributed and supported internationally by ABRI, the Animal Business and Research Institute, which is a controlled entity of the University of New England (UNE). Both AGBU and ABRI are located on the UNE campus in Armidale.

AGBU Scientists have over the last 20 years assisted the LRF with a number of projects. Every South African and Namibian knows AGBU's Dr Matt Wolcott for example. Ultrasound scanning is an established practice in these two countries because of Dr Wolcott.

Dr Steve Miller and I did our PhD's at AGBU under the guidance of then director of AGBU, Professor Mike Goddard. Another well-known name was Prof Ben Hayes who was also a student of Professor Goddard. Prof Goddard's research achievements have been recognised all over the world and he has also been elected a fellow of the British Royal Society (FRS), arguably the highest achievement that can be presented to a Scientist. Professor Goddard attended the Stockman school in 2013 and assisted the LRF executive with the BGP1 plan. I was also fortunate to do my PhD under Dr Hans-Ulrich Graser, then the technical director of AGBU. Dr Graser, who had strong ties to Germany, was instrumental in the development of many of the projects mentioned above i.e., BREEDPLAN, TREEPLAN, PIGBLUP and BREEDOBJECT.

Dr Robert Banks took over as Director of AGBU in 2012. Dr Banks, internationally recognized as an expert in animal

genetics, often delivered talks to the LRF, especially on the transition to genomics and the development of genomic reference populations. Dr Banks visited South Africa in 2014, where we as LRF were able to sit with him to discuss our BGP1 program. Dr Banks retired from AGBU in Sept 2021. The position has subsequently been filled by Dr Steve Miller.

Dr Miller, originally from Canada, has worked in the field of Livestock genetics and genomics for more than twenty-five years. His previous position was in the USA where he furthered the genetic evaluation methods for the Cattle evaluation for the Angus in the USA.

Dr Miller has been to South Africa on two occasions to attend two of the South African Stockman schools, and also the Zimbabwean Stockman school. He came in 2012 when still on faculty with the University of Guelph, in Canada with his son Seth and in 2019 when still with Angus in the USA with his son Jed.

As per the above, whilst AGBU is heavily involved in producing programs for ABRI, we have been fortunate to have most of their directors or staff visit South Africa to share their experience and to keep our producers on the forefront of genetic evaluation programs.

Launch of the Tuli Cattle Federation of Southern Africa (TCFSA)

Forty delegates from the four founding countries in the SADC region (Zimbabwe, South Africa, Namibia, and Zambia) attended the Launch of the TCFSA. The launch was funded and facilitated by AU-IBAR, without them this project may never have got off the ground.

This has been a project in the pipeline for nearly two years and our members from Zimbabwe and Namibia were supported with a presentation and technical knowledge by LRF at the launch.

The TCFSA was formed to foster relations between the neighbours. The Stud Tuli Cattle numbers in each country are relatively small and would benefit greatly from a bigger pool of data to compare with and create more accurate EBV's, genetic diversity and cross border trade. Discussions were fruitful in mapping a way forward to enable breed runs across the SADC region and across multiple platforms for data analysis. Action plans were put in place to drive projects from marketing of the Tuli, storage of genetic material, enabling new breeders to enter the market or benefit from the breed, identification of new genetics to genomics and a Sanga chip.

The Tuli has traits which they are renowned for, these are highly important in the modern climate of global warming, disease resistance and food production and will be of great importance in any cattle project. It is important these are collected correctly, analysed, protected, and utilised.

(Photo Courtesy of AU-IBAR, photographer Tafadzwa Fortune)

ABRI Celebrates 50 Years of Operation

Earlier this year, the Agricultural Business Research Institute (ABRI) celebrated a milestone achievement of 50-years of operation.

ABRI's humble beginnings date back to July of 1970, with ABRI's founder, the late Dr. Arthur Rickards OAM and his colleagues setting out to establish a technology transfer unit at the University of New England (UNE). At the time this was considered an ambitious move, but with Arthur's pioneering spirit, ABRI was established.

Arthur had initially worked for the UNE Farm Management Service Centre (FMSC) which was run between 1965 and 1970. The FMSC provided comparative analysis services of farm records to farm management and consulting professions. Arthur was instrumental in extending the centre's work of forward planning using linear programming techniques.

It was during his time in this role that Arthur saw an infrastructure gap between the research conducted by the UNE and its application into farming practices. Arthur set out to establish ABRI, with a mission to close this gap.

ABRI was created as a national agribusiness service which facilitated a connection between the technological advancements being developed by the university and the technology being used within agricultural and rural industries. The first significant achievement came soon after its establishment, in 1972, when ABRI was announced as the operator of Australia's National Beef Recording Scheme (NBRS).

One of the first major software advancements by ABRI was in 1985, using a very advanced system of genetic evaluation of beef cattle that was developed by UNE's Animal Genetics Breeding Unit (AGBU). ABRI gave the technique the product name of BREEDPLAN, and together with AGBU, developed a BREEDPLAN suite of genetic evaluation software.

Well ahead of its time, ABRI worked to digitise livestock performance records, using the power of the computer to analyse data. Before BREEDPLAN, the only way to assess the worth of a bull was to look at it and make educated guesses about its traits, or to draw on a breeder's hand-written records.

ABRI built a system that drew on objective measurements of how a bull's offspring performed, then fed those measurements into a computer to build a comparison of how the calves thrown by a bull compared with the calves of all the other bulls in the database.

Ian Locke (ABRI Chair) with Hugh Nivison (ABRI Managing Director) and Deidre Rickards at the Armidale celebrations.

Current and former BREEDPLAN extension staff catch up at the Rockhampton celebrations.
L-R Catriona Millen, Alex McDonald, Tim Emery, John Bertram, Don Nicol, Boyd Gudex and Paul Williams.

Farmers had been keeping their own similar records for centuries, but digitisation meant that many more records could be analysed, at a greater level of complexity. It was an example of "Big Data" analysis decades before the term Big Data was invented.

After 50 years of data collection, across millions of animals, across an ever-expanding list of traits, BREEDPLAN is working with billions of data points and delivering results that ABRI could only have dreamed about in early 70s.

In addition to BREEDPLAN, ABRI provide a wide range of agribusiness information products and services to the domestic and international livestock industries, catering to a variety of species, from beef and dairy cattle to sheep to goats, horses, elk, alpaca, buffalo, and wildlife.

Currently, ABRI has over 60 employees and is under the leadership of managing director, Mr Hugh Nivison.

"ABRI software led the world in 1972, and it still leads now, even though we have much more competition. The work that was done for the beef industry 50 years ago built a platform for innovation and value that has revolutionised not just the cattle industry, but livestock industries across the world." Hugh said.

To celebrate their 50-year anniversary, ABRI hosted two events. The first in Rockhampton, coinciding with Beef Australia 2021 and the second in Armidale, where ABRI was established and its head office remains.

SBTS Technical Officer Boyd Gudex with BREEDPLAN's Nicky Turner and Maddy Taylor at the Armidale celebrations.

Tim Emery, Anastasia Fanning (ABBA), Paul Williams, Catriona Millen and Steve Skinner at the Rockhampton celebrations.

BREEDPLAN Celebrates 21 Years in Southern Africa

In 1998 the Livestock Registration Federation (LRF) was formed by the South African Simmentaler, Simbra, Santa Gertrudis and SA Holstein Societies after the Animal Improvement ACT 1977 was changed to ACT 1988 to allow Societies to become individual registering authorities. Finding a suitable pedigree program was a challenge for these breeds. The Simmentaler and Simbra breeds had wanted to use ABRI's International Livestock Recording Registry System (ILR1) and ABRI's BREEDPLAN software system a decade earlier but were thwarted by the Authorities.

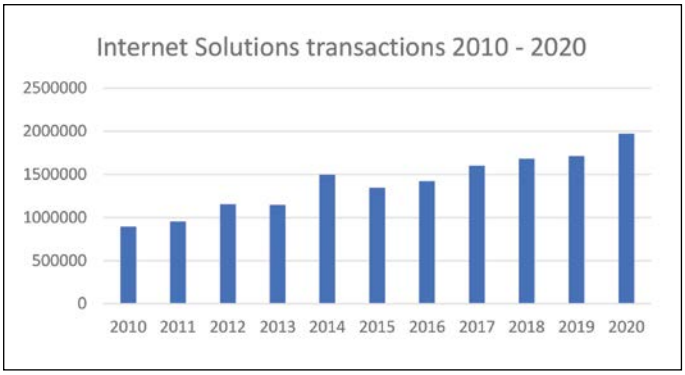
Skip a few initial challenges and the first BREEDPLAN run was done for the Brahman and Simmentaler breeds in 2001. Changing systems for the Simmental/Simbra was more of a challenge. It took senior staff at ABRI at least 10 months to clean up the data for an EBV run. In those days in South Africa, important concepts such as contemporary groups were poorly understood and many of the animals were duplicated. The EBV run was launched on Christmas eve on the 24th December 2001 as per the agreement. Producers were excited about the ranking of their animals according to EBV, especially of the bulls, and both the General Manager (Peter Massmann) and I took numerous calls from producers that evening.

In 2003 after these three, foundation beef breeds, the NSBA in Namibia also decided to use the ABRI's ILR1 system and the BREEDPLAN system. They were followed over the years by Brangus, Limousin, Braford, the Zimbabwe Herd Book (ZHB), Santa Gertrudis and recently the Wagyu Society also joining ABRI as a service provider.

The advantages of ABRI's ILR system and BREEDPLAN software are:

- The data belongs to the Society/Producer. A five-year contract is agreed with ABRI and is renewable every five years.
- The Internet Solution's software web system allows all producers, throughout the world to view contact details, an animal's pedigree, and breeding values, especially of the top bulls, and allows the ranking of animals by EBVs or by selection index values.

A LRF meeting with those Societies that use the BREEDPLAN System in South Africa, Namibia and Zimbabwe.

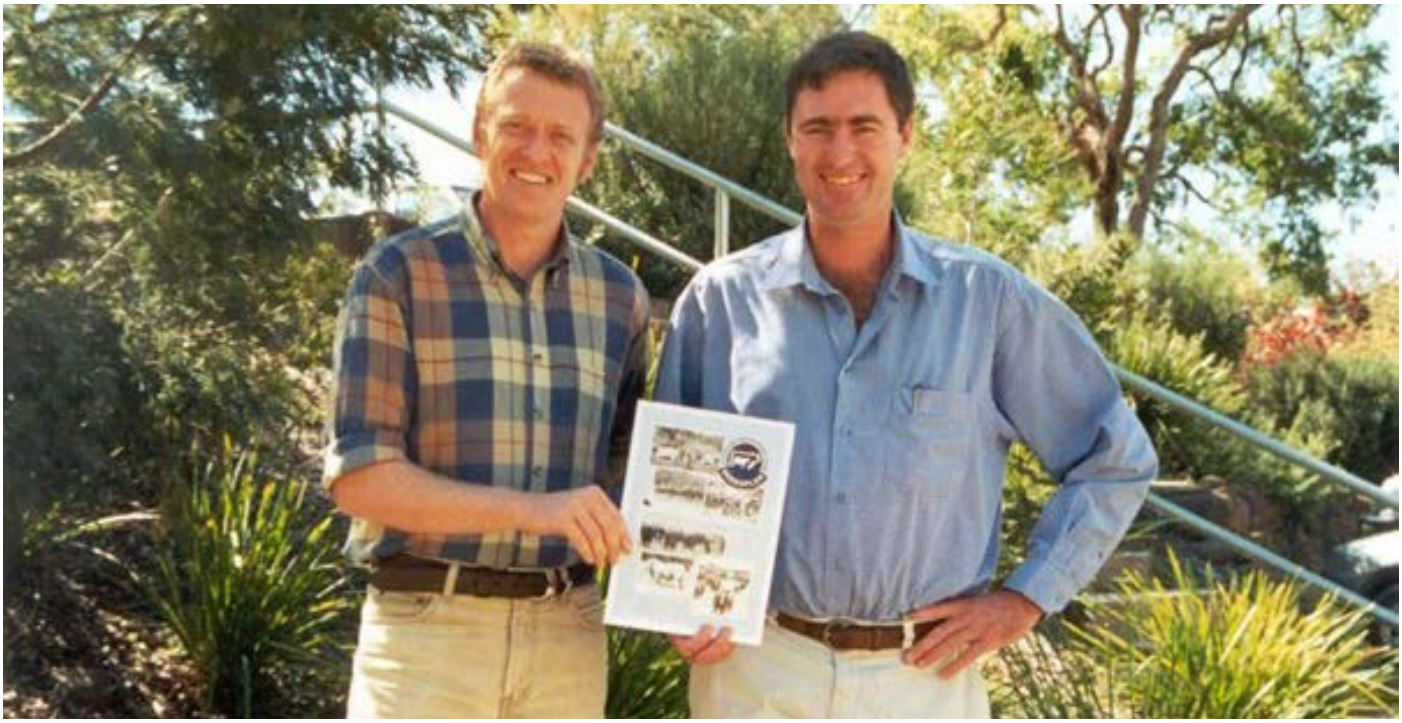


> In South Africa search engine inquiries, on Internet Solutions, have grown from 894,366 thousand to 1, 923 227 inquiries per year. This increase is shown, over the last decade, as seen in the graph above.

- ILR2, developed by ABRI is the most widely used registry system in the world with 190 separate Societies. It accommodates beef, dairy, sheep, goats, horses, alpacas and wildlife. Other business includes a software system for horses and dairy express (a dairy herd testing service).
- The software is continuously being upgraded as computing software systems are developed. For example, our Society members have upgraded from ILR, to ILR1 and then ILR2. Recently ILR2 has been put into the cloud and ILR Online is now available as a new service that allows Society members to work directly on the system.
- The BREEDPLAN recording system has followed international developments. Initially we had growth EBV's, carcass EBV's (using Real Time Ultrasound), fertility EBV's and more recently we saw the development of a selection Index to appropriately weight these EBV's for a particular production system.
- In 2017, BREEDPLAN was also one of the first systems to provide Genomic EBV's when it launched GEBV's for the Australian Brahman Association.
- International evaluations and cross country EBV's are run for numerous breeds. The two largest evaluations, that are still in the development stage, include a 6 country Hereford Evaluation and a four country Brahman evaluation that includes the USA.

Under the LRF, the BREEDPLAN system has continued to grow and develop in Southern Africa as a leading genetic evaluation and recording system. We raise a toast to all those stalwarts who were prepared to overcome significant challenges to get BREEDPLAN implemented in Southern Africa.

Dr Bradfield (*left*) and Mr Llewellyn Angus (*right*), President of the Simmental/Simbra society at that stage; signed the first contract between BREEDPLAN and the Simmentaler/Simbra Society.



Brad Crook and Dr Michael Bradfield at ABRI headquarters in Armidale, Australia.

Second Round of 'Recording for BREEDPLAN' Short Videos Released

The Southern (SBTS) and Tropical (TBTS) Beef Technology Services projects are pleased to announce the release of seven short videos for the 'Recording for BREEDPLAN' video series. Ranging from three to six minutes in length, each video gives a short overview of the methods and considerations when recording performance information for BREEDPLAN traits. These seven videos compliment the 12 'Recording for BREEDPLAN' videos that were released in August 2020.

These seven videos are:

1. Recording Mature Cow Weights
2. Recording Docility Scores
3. Recording Flight Time
4. Recording Buffalo Fly Lesion Scores
5. Recording Coat Scores
6. Recording Tick Scores
7. Recording Structural Soundness Information

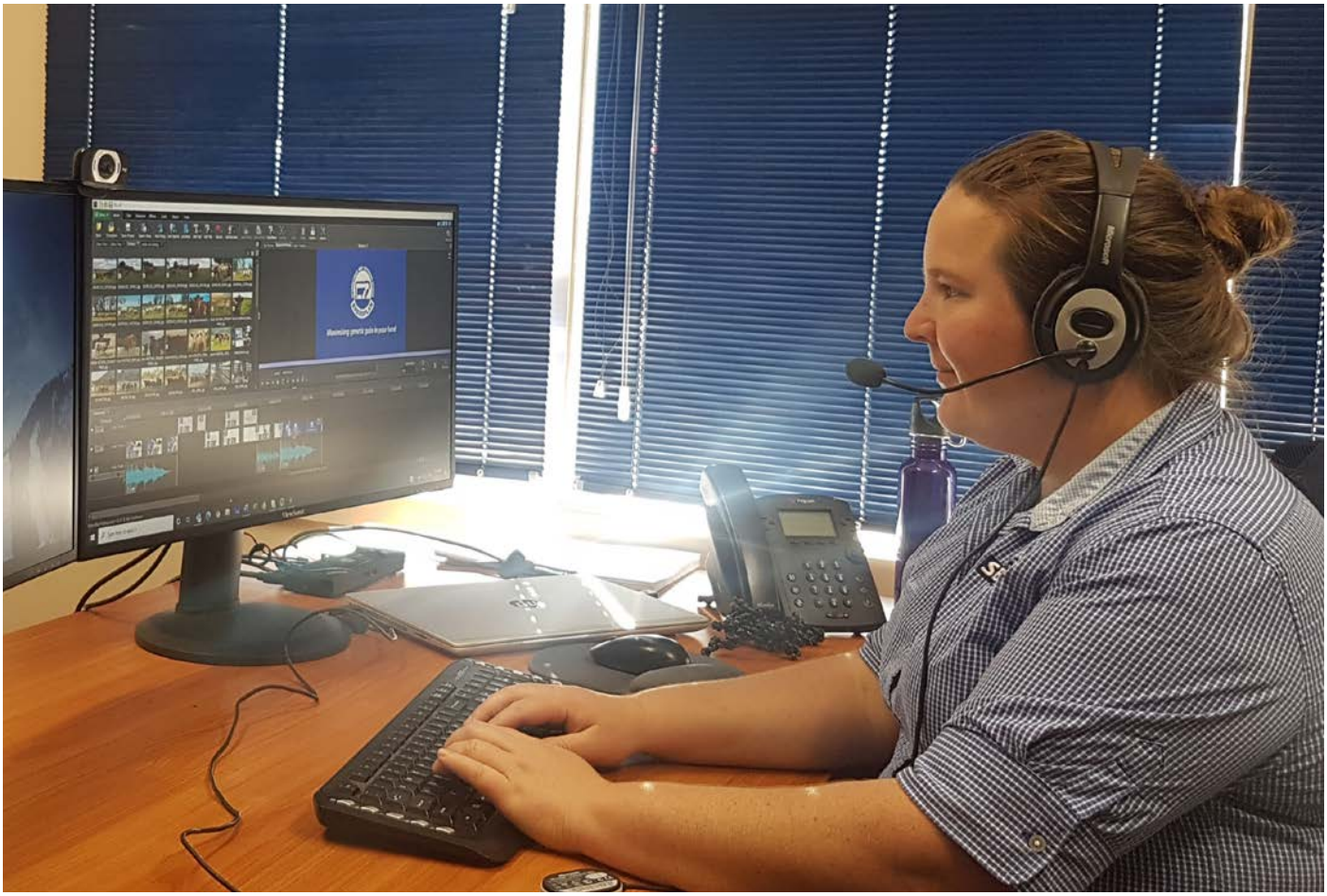
SBTS Technical Officer, Catriona Millen, said that while there are a number of written resources on recording performance data for BREEDPLAN (e.g. the BREEDPLAN Tip Sheets), some people prefer to receive information via visual or audio means. *"In developing the 'Recording for BREEDPLAN' videos, we wanted to provide a visual learning tool that will complement the existing written documentation".*

It is also anticipated that the 'Recording for BREEDPLAN' short videos will be of use to beef producers who wish to quickly refresh their knowledge around recording a particular trait. *"Breeders may watch the relevant video before heading out to the yards to collect that trait,"* she said.

All 'Recording for BREEDPLAN' short videos are available via:

- The searchable Help Centre on the BREEDPLAN website, and,
- A dedicated playlist on the SBTS & TBTS YouTube channel.

The SBTS & TBTS team wish to thank the following studs who provided photos and video footage for use in the 'Recording for BREEDPLAN' video series: Glendale Gelbvieh and Red Angus Stud, Gyranda Santa Gertrudis Stud, Seifert Belmont Reds, Vix Devons and Wirruna Poll Herefords.



BREEDPLAN Top Tips: Storing Samples for Future DNA Testing

The long-term storage of DNA samples, both for animals with samples already submitted for testing and for those where no DNA testing is envisioned in the near future, is highly recommended. Done correctly, the DNA samples can stored at very low cost and provide 'insurance' against a number of eventualities including:

- Retest required. A small number of samples will require retesting before a valid DNA result can be obtained. Therefore, the collection and storage of a second spare sample when the first is collected allows a resample to be sent to the laboratory without the need to muster the animal back into the yards for resampling.
- Further testing on already tested animals. Breeders may initially only perform one of the smaller DNA tests (e.g. parentage verification) but decide they want more DNA information (e.g. genetic conditions or 100k genotype) in the future. There is no guarantee that the laboratory will have sufficient sample remaining from the first submission, so having a second sample in storage is convenient for resubmission.
- Future testing on untested animals (alive or dead). The storage of samples collected on every animal in the herd allows future testing of any animal if any questions regarding parentage and/or genetic condition status arise. This includes future genetic conditions that we are not yet aware of.

Of the three main types of DNA samples available (see 'BREEDPLAN Top Tips: Collecting Samples for DNA Testing' in this magazine), hair samples are particularly well suited for cheap and convenient long-term storage. It is recommended that the hair follicles are placed in clearly identified individual paper envelopes and stored in the dark at room temperature (e.g., in an office draw or filling cabinet). The storage of hair samples in plastic bags can lead to them 'sweating' and going mouldy which can adversely affect the DNA quality. Neither semen straws nor TSU samples are recommended for long term storage at room temperature. They can however be frozen.

Most of the LRF societies have started building biobanks at the society offices, as part of the implementation of their DNA pipelines. They will thus request that samples be submitted in duplicate.

Optimise Joining Using MateSel

Deciding which bull is mated to which cow has a major impact on the rate of genetic improvement, inbreeding levels and overall profitability being achieved by a herd. MateSel enables breeders to optimise breeding outcomes by creating a suggested mating list based on a list of candidate sires and dams.

MateSel is a valuable addition to the BREEDPLAN suite of tools and provides beef cattle seedstock producers with a guide for objectively optimising mating allocations to reflect their breeding goals and creating long term, sustainable genetic gains. The genetic gains are based on a nominated selection index, while constraints are applied on inbreeding to ensure genetic diversity is maintained or improved.

MateSel creates additional genetic progress within a breeding program by generating a suggested mating list from a list of sires and dams that a seedstock producer nominates as being available for use within their upcoming joining program. MateSel not only allows seedstock producers to maximise genetic progress whilst managing inbreeding, but will also save significant time previously spent compiling mating lists.

MateSel is fully customised to the breeding program of each individual seedstock operation with the seedstock producer choosing acceptable inbreeding limits by selecting one of three breeding strategies, "Genetic Diversity", "Balanced" or "High Genetic Gain" and providing details of their desired breeding objective.

The LRF office will investigate the application of MateSel in Southern Africa, to start delivering these services in 2022.

South African Awards

Molatek Landbouweekblad / Breedplan Stud Breeder of the Year

Molatek Landbouweekblad/Breedplan Stud Breeder of the Year: Congratulations to Mr Riaan Theron (RAT Brahmane) (photo) who was named the Molatek Landbouweekblad / Breedplan Stud Breeder of the Year for 2021. The runner up was Mr Willem Botha from Tandele Simmentalers.

BKB/LRF Services to Industry

This year the LRF honoured Mr Koos van der Ryst for the contribution he has made to the industry as former chairman of the Red Meat Producers Organization (RPO).

RPO/NERPO Emerging Farmer of the Year

Congratulations to Ms Keneiwe Raphesu for receiving the RPO/NERPO Emerging farmer of the year award. Keep up the good work.

ABSA Services to the Emerging Sector

LRF also honoured Mr Patrick Sekwatlakwatla from Sernick for the Services rendered to the emerging sector through the programs they run at Sernick. Thank you very much.

Checkers Meat Scientist of the Year

For the first time this year, the LRF honoured the Meat Scientist of the Year. This year the award went to Prof Arno Hugo from the University of the Free State. Thank you very much for your contribution.

Zoetis Proven Bull of the Year

Congratulations to the following breeders for winning the Zoetis Proven bull of the Year award in their respective breeds.

Brangus
Malherbe RC & Ven. (Gert & Suna Malherbe) - RCM1367

Braford
Heelbo Boerdery (Charlotte Schuite) - BB1432

Brahman
Boland Landbou Brahmane (Gerrit Louw) - JVZ07144.

Limousin
La Rhone (AJ du Toit) - LR1556.

Santa Gertrudus
Multiple owners - VV140112

Simbra
CJ Muller (Emile Groenewald) - VBG1612C

Simmentaler
Chrismar Familietrust (Chris Oelofse) - PN15462

Vytelle Young Bull of the Year

Congratulations to the following breeders for winning the Vytelle Young bull of the year award in their respective breeds.

Brangus
Goedgenoeg Boerdery (Riaan Hagendijk) - GBB1959

Braford
TJ De Jager (Theuns & Marlene de Jager) - NT1826

Brahman
Rihugo Boerdery (Hugo & Janel Maree) - HHM1926

Limousin
Xourel Limousins (Derick le Roux) - XRL1816

Santa Gertrudis
Die Erika Kleynhans Trust (Herman Kleynhans) - KVS180428

Simbra
W Wilckens (Werner & Dagmar Wilckens) - WW18228B

Simmentaler
Boekenhout Trust (Johan & Annemarie Styger) - BTB1926

Implementation of ILROnline

The LRF is very excited to announce that ABRI/BREEDPLAN is almost done with the process of implementing their latest application, ILROnline, for most of the South African LRF societies. It is a web-based application. The application will enable breeders to in real-time register animals, record performance information, transfer animals, dispose of animals, etc. on their society databases.

An essential prerequisite for ILROnline is that a society's ILR system and database will need to be transitioned from the society's on-premises server to ABRI's cloud server. This has been done for all the South African LRF societies.

ABRI will progressively standardise their ILR software to maximise software development and support efficiencies. The current functions of the Internet Solutions web system will eventually be incorporated into ILROnline.

Some of the features that breeders can look forward to, includes the following:

1. List of all registered and pending animals at the society.
2. Extract a list of all your registered and pending animals in csv. format.
3. See reasons why animals are pending.
4. Register calves on the society database. With all the necessary checks in place.
5. Dispose of animals easily, without a need to fill in disposal forms.
6. Transfer animals to stud or commercial breeders.
7. Keep a list of buyers/sellers. Access to a list of all the buyers that you transferred animals to in the past three years.
8. Performance information:

> See exactly which weights and traits have been recorded for a specific animal.

> Record outstanding weights and traits.

9. Access to various reports.

The system has the same data quality checks in place as currently set up on the society database for society staff, to ensure that breeders enter data of good quality. The system describes each of the errors/warnings clearly, as to inform breeders of the exact problem or which information was incorrectly entered or is missing.

With ABRI's focus on providing a more standard software solution that is configurable for different clients (compared to ILR2 which is programmed differently for each client), they will be concentrating on delivering all new breed registry features via ILROnline. This makes the most efficient use of ABRI programmer's time for both development and support, as well as delivering a more feature rich product for all clients.

Over time, you will notice increasing functionality in ILROnline for the public, members and registry staff. We are excited about the way this software will allow more efficient capture and display of data, and a more user-friendly method of interacting with society data.

For more information, please contact your breed society office or the LRF office. You can also visit the ILROnline YouTube channel for short videos on how to make use of the ILROnline software.

Vale - Dr Michael Bradfield

His Passing Leaves a Huge Void in the Southern African Livestock Industry

Dr Michael Bradfield (56) passed away on 6th January 2022 and from all the condolences coming in so spontaneously it shows not only how much he was respected by the stud breeding sector in Southern Africa and the livestock sector in general but both the local and international scientific community

Michael grew up on a sheep and cattle farm in the Eastern Cape of South Africa, where he also worked as a farm manager for Cloete Farms for five years. His passion for cattle genetics led him to studying first at the University of the Free State and he then concluded his post graduate studies in Edinburgh (Scotland) and Armidale (Australia). Michael was exposed to some of the most knowledgeable scientists of the time but his passion for home bought him back to Southern Africa more than 20 years ago to engage with the livestock industry, more specifically the stud breeding sector.

One of his major achievements was the introduction and rolling out of BREEDPLAN to Southern Africa. The introduction of BREEDPLAN, one of the worlds most advanced systems of performance recording and genetic evaluations, placed many of the Southern African stud cattle breeds on an international level of genetic evaluations and cattle breeding with immediate effect. In conjunction he introduced the now widely used herd management software program, HerdMaster, into Southern Africa and established his company AgriBSA under which he operated.

Michael was a strategist who was involved in many development processes but here are a few of his more notable achievements:

- The establishment of the popular annual Stockman School where livestock producers and the wider industry are exposed to experts from around the world on specific topics of animal breeding as well as aspects of the wider livestock industry down the whole value chain. Many development and implementation actions resulted from Stockman School presentations over the years.
- The restructuring of the Livestock Registration Federation (LRF), in his capacity as CEO, into a well-organized and structured entity with set goals and targets and a very wide spectrum of functions to assist the stud industry in Southern Africa, which includes South Africa, Namibia and Zimbabwe. His engagements on numerous issues of collaboration and education in terms of courses or the many articles he wrote for publication to educate the wider public.

- One of the initiators and founding members to conceptualize the Beef Genomics Program for all cattle breeds in Southern Africa, with the securing of funds. Various breeds benefitted from this financially and has placed them on a structured path of genetic improvement.
- His engagement over the last year or two to not only expose breed societies to the new technological advances in the field of genomics, but to practically engage breed societies and breeders to take advantage of genotyping their cattle and thus enhance their genetic evaluations.
- His focus on the whole value chain from producer, to the feedlots, to the abattoirs and meat processors and finally to the retailers and the market. He was especially focused on the quality of the final product on the plate of the consumer.
- His engagement with industry role players outside the stud industry. The industry meeting in March 2017 which he organized, turned a new page in the collaboration of role players in the whole value chain. Michael served as a co-opted member on the board of the Red Meat Producer

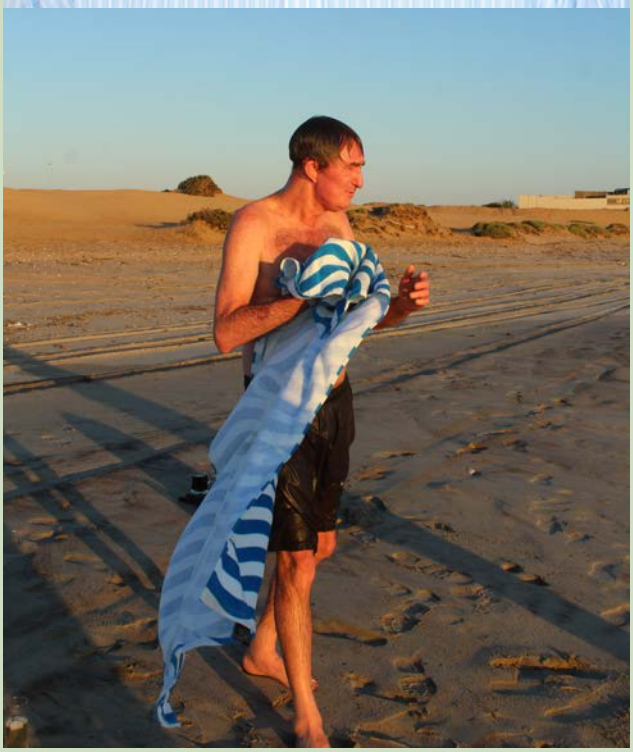
Organization and served on the National Animal Health Forum where he actively participated in the development and planning of the Livestock Identification and Traceability System for South Africa as well as on the Foot and Mouth Disease strategy. Even there he anticipated better international market access.

- His knowledge and experience in animal breeding and traceability systems brought him also to countries in the northern part of Africa as well as Pakistan through World Bank projects.

On a more personal note Michael was a visionary always two steps ahead in planning and strategizing. He had the ability to motivate and inspire people around him with a positive attitude and was a good and gentle communicator across the cultural spectrum of Southern Africa. He was dedicated and committed and had a passion to advance and promote livestock production, never with his own financial benefit in mind. Many of us who have worked closely with Michael and have known him for more than two decades are indebted to him and to the level he has brought this industry.

It is in this spirit that we as the LRF and the industry at large should see it as our responsibility and duty to carry on building on what Michael had visualised - we owe it to him. He has given so much of himself to the cause he believed in, without getting sufficient recognition or adequate financial compensation for it. He has given his whole productive live for this industry and we should therefore step up and carry on as torch bearers.

MECKI SCHNEIDER - CHAIRPERSON LRF



Photos clockwise from top:
Stud breeder of the year awards; attending the October 2021 Stockman School.
A young Michael Bradfield.
Michael swimming in the Atlantic, October 2021 near Swakopmund.
Michael and Professor Frikkie Neser at the Stockman School October 2021.
(photos courtesy of Charl van Rooyen)

Accessing Support in Application of Genetic Technologies

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For support in the use and understanding of the different genetic technologies available or to discuss information included in this edition of the LRF-TS News, please contact any of the above offices.