

LRF-TS news

SEPTEMBER 2026



A group of Simbra cows. This photograph took first place in the Simbra SA photograph competition's group category and was taken by Gerrit Viljoen.



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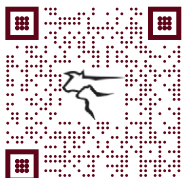
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Dear LRF family,

I would like to share a few thoughts and reminders with you.

Firstly, as members of the LRF family and staff, we would like to pay tribute to Johan Styger, our former president. Johan has always been passionate about his cattle, performance testing, and the science behind cattle breeding. We are sorry that, due to health reasons, he has had to sell his farm and top Simmentaler stud. We wish Johan, Annemarie, and the family all the best during this challenging time.

I would also like to welcome Francois Scholtz and Jamie Berger to the LRF executive board. Thank you both for making yourselves available to serve the LRF family. I know you will be valuable assets to the executive.

I would like to urge all our breed societies to encourage their members to attend the 18th Annual LRF Stockman School. This is our showcase in the cattle industry, with an excellent programme featuring local and international speakers. I encourage everyone to make the most of this valuable opportunity to learn and engage with others in the industry.

I would also like to encourage our members to make use of our excellent LRF staff when you encounter challenges or need assistance. They are your link to the Agricultural Business Research Institute (ABRI) and the BREEDPLAN team. We can only provide the best possible service when you, our members, share your challenges and needs with us. Please make use of the knowledge and support available to you.

Finally, a reminder of our members' meeting on Tuesday, 6 October, at Aldam, followed by the Stockman School from 7 to 9 October, also at Aldam.

I look forward to seeing many of you there and to continue working together as the LRF family.

Kind regards,

Wayne Porter
LRF chairperson

BreedLOGIC Database Search

We are pleased to announce that BreedLOGIC Database Search is now available to all LRF member breed societies across Southern Africa. ABRI will commence a phased regional roll-out, with the ABRI team contacting societies directly over the coming months to confirm timing and next steps.

BreedLOGIC Database Search is designed to become the primary public search interface for breed society information, while integrating seamlessly with the existing Internet Solutions (ILR2) system. During the introductory period, both platforms will operate alongside each other, allowing members to become familiar with the new system while continuing to use existing registry workflows without disruption.

Access and explore BreedLOGIC now.

The new platform provides a faster, more intuitive way to search and

explore animals, pedigrees, members, sales information, and genetic evaluation data. It features a clean, modern interface designed to work seamlessly across desktop, tablet, and mobile devices. The platform is read-only by design, helping keep registry data secure while providing members with improved access to information.

The roll-out will be provided at no additional cost to societies. The phased approach is intended to deliver the benefits of BreedLOGIC earlier while allowing each society time to become comfortable with the new platform. Existing systems will remain fully operational throughout the introductory period, and ABRI will work with societies that wish to adjust their roll-out timing once contacted.

Support for the transition

To support members during the transition, the BreedLOGIC Knowledge Base will provide a central collection of

help and support resources, accessible through the platform's Support & Resources section. Resources will include user guides, FAQs, instructional videos and a downloadable booklet, with further content added over time. The *Using BreedLOGIC Database Search* booklet is an ideal starting point, bringing together key guides and support information in one convenient resource.

BreedLOGIC Database Search represents an important step forward in how breed society information is accessed and shared across Southern Africa. LRF member breed societies, together with the LRF and ABRI, look forward to supporting members throughout the transition and helping them make the most of the platform's enhanced search and information capabilities. LRF

Click here to access the BreedLOGIC Knowledge Base.

Improving fertility traits

Article from FutureBeef

The fertility of a breeder herd has a significant impact on the profitability of a beef breeding business. Basically, more weaners from a set number of breeders over a defined period (12 months) are more profitable.

The next bull you purchase is a key factor that will affect the reproductive performance of your breeder herd and can impact your herd for the next ten to 15 years. This will come from keeping a selection of his daughters (or sons) to enter the breeding herd (i.e., a self-replacing herd).

The question to ask is: How do I know that the bull(s) I am selecting will have the genetic package to produce very fertile daughters?

There are currently two pieces of genetic information that can be used as a guide to selecting bulls with 'good' fertility genetics. These are genetic differences (BREEDPLAN estimated breeding values – EBVs) for scrotal size (SS) and days to calving (DC).

Scrotal size

Scrotal size EBVs are estimates of the genetic differences between animals in scrotal circumference (cm) at 400 days of age. Scrotal size is measured by BREEDPLAN members from behind the animal (*Photo 1*). The scrotum containing both descended testes is measured using a tape positioned where scrotal circumference is greatest. At the same time, the scrotum can be palpated to detect abnormalities.

Increased SS is associated with increased semen production in bulls, and earlier age at puberty of bull and heifer progeny. SS also has a small favourable relationship with DC, such that bulls with larger SS tend to have daughters with shorter DC.

Larger, more positive, SS EBVs are generally more favourable. For example, a bull with an SS EBV of +1,7cm would be expected to produce sons with larger testicles at yearling

age and daughters that reach puberty earlier than the progeny of a bull with an SS EBV of +0,4cm.

A raw SS (e.g. 36cm) and SS EBV (+1,7cm) on sale bulls should not be confused, as they indicate slightly different traits. A raw SS should be used to indicate if a bull has a higher probability of being fertile himself (i.e. is able to get his share of cows in calf). The threshold for two-year-old *Bos indicus* sale bulls on 'good' nutrition is 34cm.

Bulls selected for high SS EBVs are expected, on average, to breed daughters with earlier puberty and shorter DC.

Days to calving

DC EBVs are estimates of genetic differences between animals in female fertility, expressed as the number of

days from the start of the joining period (i.e. when the female is introduced to a bull) until subsequent calving (*Figure 1*).

When a bull is introduced into the female herd at the start of mating, some cows or heifers are more likely to conceive at the beginning of the mating period, whereas others tend to take longer to get in calf. Variation in DC is mainly due to differences in the time taken for females to conceive after the commencement of the joining period (*Figure 1*).

Females with shorter DC EBVs tend to return to oestrus sooner after calving, increasing their chance of producing a calf every year. Females with shorter DC EBVs also tend to be those which show early puberty as heifers and conceive early in the joining period. Because females with a shorter DC EBV are more likely to go into calf



Measuring scrotal size.

earlier in the joining period, they calve earlier than their contemporaries. The calves may be smaller and less prone to causing dystocia, and they also have more growing time in the lead-up to weaning.

Negative DC EBVs indicate a shorter interval from the start of the joining season until calving. DC EBVs may be reported for sires and dams; however, only animals with reasonable accuracies are likely to appear in catalogues. The DC EBVs are reported in days and will generally have low accuracies until a sire has a large number of daughters with DC records.

The DC EBV is heritable, so bulls pass the trait onto their daughters. Lower or negative DC EBVs are generally more favourable and indicate sires that will produce daughters with a shorter number of DC, and this effect will be cumulative over the life of those daughters. A bull with a DC EBV of -5 days would be expected to produce daughters that conceive earlier in the joining period than the daughters of a bull with a DC EBV of +5.

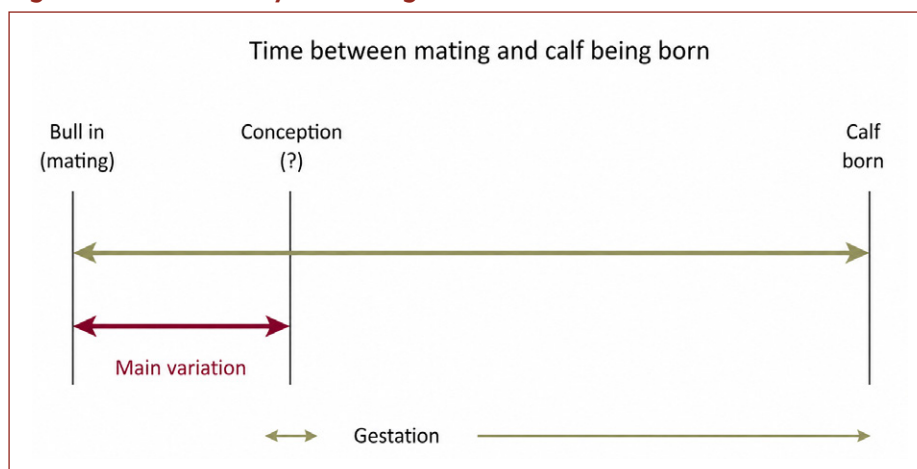
If breeding is your main enterprise, keep in mind both the genetic and environmental factors that impact on the fertility and productivity of your herd.

As is seen in *Figure 1*, DC should not be confused with the length of gestation. The gestation length EBV provides an estimate of the genetic difference between animals from conception to calving and is commonly recorded for calves conceived by either artificial insemination or hand mating, as it requires the exact date of conception. The DC EBV is currently calculated only for natural joinings, where the actual date of conception is usually unknown.

Aspects correlated with DC

Results from Beef CRC research with Brahman herds have shown that significant economic gains can be

Figure 1: Measure of days to calving.



made by selecting bulls with superior genetics for reproductive traits such as DC. One bull in the project was shown to reduce the DC of his daughters by up to 15 days. This equates to more than a 15% difference in calving rate, with the added benefit of steers being born early in the calving period and within a shorter time frame, providing significant advantages when preparing and managing sale progeny.

The project also found that the age of puberty in heifers (evaluated by regular ovarian scanning to detect the age at first *corpus luteum*) is strongly genetically correlated with both days to calving and calving success following first joining of heifers at approximately 25 months of age.

Note that there is only a small favourable relationship between SS and DC. Therefore, it is strongly recommended that you select for the DC trait directly if you want to improve female fertility.

Research by the Northern Territory Department of Resources showed that a Brahman herd that selected for these fertility traits increased yearling heifer conception rates by 35% and increased lactating cow reconception rates by 31% when compared to commercial animals under the same environmental conditions. This herd demonstrates that applying strict selection for fertility traits can significantly improve herd fertility and profitability.

Because of the value of the DC EBV, it is strongly recommended that bull breeders supply DC EBVs with sale

bulls and females, and that bull buyers request them.

Conclusion

Progress in fertility can be made by selecting bulls with the right genetic package. Indicators of bulls with a good genetic fertility package are those with an above-average SS EBV and below-average (negative) DC EBV. Other EBVs (e.g. weight, carcass) should be included in a balanced package of traits.

The reproductive ability of the bull to sire calves and pass on desirable genetics is a critical factor. Bulls selected must pass a bull breeding soundness examination (BBSE). A BBSE should include a sperm morphology assessment to determine a bulls' percent normal sperm, an indicator of his 'calf getting' ability. This trait is also heritable and genetically related to the interval from calving to first oestrus cycle in females.

If breeding is your main enterprise, keep in mind both the genetic and environmental factors that impact on the fertility and productivity of your herd. A combination of selection for low DC EBV bulls with above-breed-average scrotal size, and a stringent culling programme for non-productive cows will help to enhance the reproductive performance (and therefore profitability) of your herd. **LRF**

To read the original article, [click here.](#)



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The Complete Breed

How gestational nutrition impacts calf health and future herd fertility

By Jordan Lamb

Proper nutrition during gestation plays a critical role in the productivity, health, and long-term success of beef cattle operations. Research and industry experts continue to emphasise that what a cow consumes during pregnancy not only affects her own health but also has lasting impacts on fertility and the lifetime performance of her offspring. Understanding these connections allows producers to make informed management decisions that directly influence profitability and herd sustainability.

John Hall, University of Idaho professor and extension beef specialist, presented research on how cow herd nutrition during gestation affects fertility and calf performance during the **2025 Applied Reproductive Strategies in Beef Cattle Symposium** in North Platte, Nebraska. While Hall shares several valuable takeaways, his central message is clear: Proper nutrition during gestation extends far beyond the cow. Producers who invest in adequate nutrition for pregnant cows often see returns in improved herd condition, fertility, calf survival and long-term productivity.

What is the ideal pregnant cow BCS?

According to Hall, body condition score (BCS) remains the most reliable indicator of a herd's nutritional status. Maintaining a moderate to good condition before calving is essential for reproductive success:

- **Oestrus recovery:** 90% of cows with a BCS of 5 or greater reached their first oestrus by 60 days postpartum.
- **Pregnancy rates:** Cows with a BCS of 6 achieved pregnancy rates near 60%, while those at a BCS of 4 dropped to 40%.

Research shows cows maintained in moderate to good body condition before and after calving are more likely

to resume cycling on schedule and produce healthy, vigorous calves.

How does cow nutrition affect calf vigour and nursing?

Nutritional status directly impacts how quickly a calf stands and consumes life-saving colostrum. For a BCS 6 cow's calf the average time to stand and nurse was 35 minutes; for a BCS 4 cow's calf the average time to stand and nurse was one hour and 35 minutes.

Hall says calf vigour is especially critical during the first hours of life, as timely standing and nursing allow calves to consume colostrum. Delays in colostrum intake increase the risk of illness and mortality.

Can maternal nutrition improve calf immunity against BRD?

Yes. Maternal nutrition also has a significant impact on calf immunity. Studies presented by Hall demonstrate that supplementing dams with specific fat and protein sources during gestation reduces the incidence of bovine respiratory disease, or BRD, in offspring and improves calves' responses to vaccination.

Fat supplementation: High-fat diets during pregnancy enhanced the calf's immune response to BRD vaccines.

Feedlot performance: Calves from supplemented dams experienced lower disease rates upon arrival at the feedlot.

Improving heifer offspring fertility

Protein supplementation on deficient rangeland during late gestation pays dividends in the next generation of the herd.

- **Pregnancy rates:** Heifers from protein-supplemented dams achieved a 93% pregnancy rate, compared with 80% for those from non-supplemented dams.
- **Calving ease:** 78% of supplemented cows calved unassisted, compared with 64% of cows that received no protein supplementation.

These improvements not only enhance reproductive efficiency but also reduce labour demands and veterinary costs.

Supplementation should fit the ranch

Nutrient density and intake requirements change throughout gestation and lactation, and Hall stresses the importance of matching diets to each production stage. He also cautions there is no one-size-fits-all diet. Producers should monitor BCS regularly and adjust supplementation based on forage availability and quality, labour resources and management logistics, and current stage of production. "Supplementation strategies should fit the ranch," he says, emphasising nutrition decisions must account for forage availability, labour resources, management logistics, and economics.

For many producers, small adjustments in supplementation timing, forage management or ration formulation can yield significant returns. Monitoring body condition regularly and proactively addressing nutritional gaps can help ensure cows calve in adequate condition, support calf vigour, and maintain reproductive efficiency. Cow nutrition during pregnancy is not simply about maintaining body weight. It directly influences fertility, immune function, calf survival and the long-term productivity of the herd.

Hall summarises that producers who strategically manage body condition and implement targeted supplementation programmes are better positioned to improve reproductive outcomes, enhance calf health and build resilient, profitable operations for the future. **LRF**

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BCS at calving a key predictor of reproductive success

By Haley Linder, PhD, assistant professor, Department of Animal Sciences, Ohio State University

Body condition score (BCS) at calving is one of the best predictors of reproductive performance in beef cows. The period between calving and rebreeding is the most nutritionally demanding stage of production because nutrient requirements are highest due to lactation and peak milk production. When energy intake does not meet energy demand, cows must rely on body energy reserves (fat stores) to make up the deficit. Cows that calve in thin body condition (BCS < 5) are already starting 'behind' because they have fewer energy reserves available to support both lactation and reproduction.

There is a biological priority system for nutrient use in the cow. Nutrients are first directed toward maintenance, then growth (particularly in first-calf heifers), followed by milk production and finally reproduction. As a result, thin cows prioritise maintaining themselves and supporting the calf at their side rather than returning to oestrus and becoming pregnant again in a timely manner.

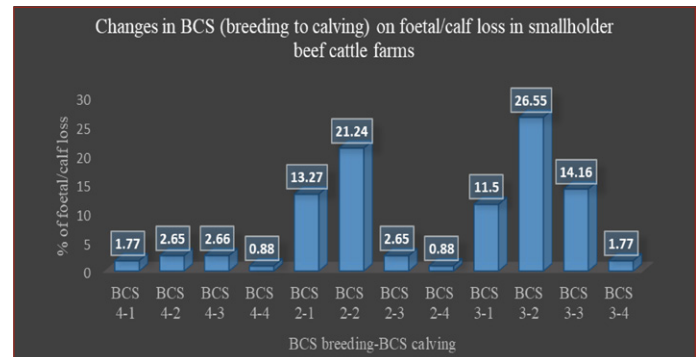
What BCS means for calving

Research has demonstrated that cows calving at a BCS of 3 have an average postpartum interval (days to return to oestrus) of approximately 88 days, compared to about 52 days for cows calving at a BCS of 6. Pregnancy rates may also be reduced by as much as 30% in cows calving at a BCS of 4 or less compared with cows calving at a BCS of 5. The target is generally for mature cows to calve at a BCS of 5 to 6, while first-calf heifers should ideally calve closer to a BCS of 6 due to their additional nutrient requirements for growth.

Achieving adequate body condition before calving is far more efficient and economical than attempting to add condition after calving, when nutrient demands are already high.

Body condition scoring is a practical management tool that allows producers to evaluate the energy reserves of

Figure 1: Body condition scoring according to the five-point scale. (Source: LRF-TS, March 2024)



Body condition scores: (A) 1 = poor, (B) 2 = thin, (C) 3 = moderate, and (D) 4 = fat. Cows in BCS 5 (not included in the images) are considered as grossly fat.

their cows. Key areas to assess include the backbone, ribs, hooks and pins, tailhead and brisket. Producers should evaluate fat cover rather than being misled by pregnancy status, rumen fill, or hair coat thickness. Thin cows will have more visible skeletal structure and less fat cover over the ribs, spine, and tailhead, while fleshy cows will have smoother appearance and greater fat deposition in these areas.

Separating thin cows from cows in adequate condition can help producers manage nutrition more effectively and allocate feed resources. Providing additional nutritional support to thin cows before calving may improve reproductive performance, shorten the postpartum interval and ultimately increase the likelihood of maintaining a yearly calving interval. [LRF](#)

To read the original article, [click here](#).



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Fate of enteric methane in the atmosphere and biogenesis

By Dr Heinz Meissner, research and development programme manager, Milk SA

Methane (CH_4) produced by ruminants (enteric methane) is in the spotlight due to its assumed high global warming potential. This has resulted in perceptions and policies with profound effects on worldwide ruminant farming and production, especially cattle.

This article will show that CH_4 emissions should be considered in the context of their different fates and timelines in the atmosphere, their warming effects, and the limitations of counting only CH_4 emissions in life cycle analysis (LCA), rather than carbon in and out.

Methane is released from many sources other than ruminants. These include belowground fauna, shellfish, blue-green algae, saprophytic fungi, wetlands, lakes, landfills, rice paddies, fossil fuels, and fires. It is classified into biogenic and anthropogenic sources, the latter two of which are thermogenic and pyrogenic.

Biogenic sources are from natural sources, thermogenic sources are from fossil fuels, and pyrogenic sources are CH_4 released by fires. It is important to note that these forms have different atmospheric lifespans and global warming potentials due to their distinct breakdown rates, as discussed here.

CH_4 in the atmosphere

Methane accumulates primarily in the troposphere. Its activity is expressed in one of three ways: half-life, lifespan, and perturbation time. Half-life is the time it takes for 50% of the methane to break down in the troposphere. Lifespan is the average time CH_4 takes to break down in the troposphere, and perturbation time is the time for all lingering effects of CH_4 to subside.

Currently, the half-life is about seven years, the average lifespan is nine to 12 years, and the perturbation time is around 13 years. So, if 100 units of CH_4 are emitted at one time, 50 would have disappeared in six to seven years. The breakdown, however, occurs along an exponential curve, so some CH_4 will break down very quickly (within a few minutes), while others that escape into the stratosphere can last as long as 144 years. The average of nine to 12 is the median point of the exponential curve.

Breakdown of methane

Methane is oxidised by hydroxyl radicals in the atmosphere to carbon dioxide (CO_2) and water vapour (H_2O); the extent of this process is referred to as the atmospheric oxidation capacity. A hydroxyl radical is an OH molecule with an unpaired electron, primarily formed from ozone (O_3) photolysis, although there are other ways as well.

The hydroxyl radical is super reactive, and referred to as the 'atmospheric cleaner' which removes or breaks down

numerous trace gases; the most important being carbon monoxide (CO), CH_4 , numerous anthropogenic volatile organic compounds from industrial processes and burning of fossil fuels, and biogenic hydrocarbons from plants, phytoplankton, and algae.

The removal of CH_4 is influenced by both the staying time and the amount in the atmosphere. Since the start of the industrial revolution, the half-life, average lifespan, and perturbation time of CH_4 have all increased.

There are several reasons for this, the most obvious being the burning of fossil fuels. Burning fossil fuels does three things. Firstly, it releases much more CH_4 than was previously accounted for in the biogenic CH_4 cycle. Secondly, it releases CO, which reduces the atmospheric oxidation capacity for CH_4 by consuming the hydroxyl radicals needed to break down methane. Thirdly, the added air pollution and smog interfere with the wavelengths of light needed for ozone photolysis. Thus, with longer half-lives and lifespans for CH_4 , more CH_4 accumulates in the atmosphere, increasing atmospheric warming.

Biogenesis and CH_4

The earth has a mostly closed and repetitive system with a finite number of elements, including carbon, that exist in molecules or radicals in solid, liquid, or gaseous states. These elements cycle and recycle through phase changes in various molecules at different speeds and time scales.

With carbon (CH_4 in this case), the problem has been that science has concentrated mainly on emissions rather than on total carbon accounting analysis (clearly because of the global warming scare). However, with the recent introduction of isotope and satellite methodologies and carbon budget analysis, it has been shown that the amount of CH_4 emitted is closely matched by the amount oxidised.

If the amount emitted exceeds the amount oxidised, the excess persists and accumulates in the atmosphere. The biogenic cycle shows a balanced carbon budget because it involves the same carbon being cycled, whereas carbon (CH_4) accumulates during thermo- and pyrogenesis. This results from OH being largely consumed by additional anthropogenic CH_4 emissions and by CO produced through the combustion of fossil fuels and fires.

A further reason for the balance being disturbed is that atmospheric carbon has also increased due to the reduction of photosynthetic carbon cycling capacity through industrial and tilled agricultural practices, degradation, desertification, and deforestation, as well as the weakening of soil and tropospheric sinks. Soil sinks rely on microbial and chemical processes, while tropospheric sinks rely on

hydroxyl radical availability (i.e. the atmospheric oxidation capacity). Agricultural practices and livestock production have been implicated in all of these; hence, there is a responsibility for reversal and regeneration.

Atmospheric oxidation capacity

All pathways of OH formation are directly and indirectly tied to moisture and biogenic activity. In ecosystems rich in vegetation, organic volatiles, soil microbes, and photochemical flux – essentially ‘alive air’ – OH production can be orders of magnitude higher than in dry or desert-like air. More humid ecosystems produce a lot more hydroxyl radicals during both day and night. So, when the hydroxyl radical concentrations are increased, the half-life and lifespan of CH₄ and other hydrocarbons are reduced, even though the rate constants (reactivity of the molecule) of the various gases stay the same.

Thus, biogenic CH₄ emitted into the troposphere in an ecosystem context where precursors for hydroxyl radical formation are present will be oxidised faster than its average lifespan of nine to 12 years. This is due to the greater availability of hydroxyl radicals and, therefore, to an increased atmospheric oxidation capacity compared with other systems.

To bring this into a CH₄ management context: Reducing thermogenic and pyrogenic CH₄ emissions should be the first priority. Reducing deforestation, degradation, and desertification should be a further priority.

Rehydration of degraded landscapes:

- Increase soil carbon through increasing organic matter via decomposition and microbial carbon metabolites and necromass (dead microbes).
- Improve soil structure via mycorrhizal (fungal) associations, which will increase oxygen, water infiltration and retention, root zones for water, phosphorus and micronutrients, and photosynthetic rates and root exudates.
- Increase above- and belowground biomass (plant and microbial), which will increase plant transpiration, biogenic volatile organic compounds (BVOCs), microbial diversity, and facultative and obligate endophyte (e.g. fungus that lives in a plant) diversity. BVOCs have two functions: Together with nitric oxides in the soil, they form OH via O₃ photolysis, and in combination with OH, they form secondary organic aerosols, which can seed clouds and consolidate water vapour into rainfall. An increase in endophyte diversity reduces methanotrophs (microorganisms that metabolise CH₄ in the soil), thereby limiting the total CH₄ load entering the troposphere.

Implications for agricultural practices

In crop production, soil organic matter and carbon must be protected and maximised. This requires minimal or no tilling, the use of cover crops, and, where appropriate, the introduction of livestock through regenerative (RA) practices.

Here, and in sole ruminant livestock systems, well-managed rotational grazing programmes, such as adaptive management or quick rotation high intensity systems, the following benefits may accrue:

- Grazing redirects photosynthetically fixed carbon in plant vascular tissue from going to the leaves and seeds down to the roots and being exuded as exudates for minerals. This action will increase soil organic matter.
- Grazing causes the release of BVOCs.
- Breakdown and decomposition of plant material will be promoted, particularly in semi-arid and arid environments with less moisture. Decomposed materials will increase organic matter.
- Manure, which is approximately 30% microbes (bacteria, fungi, protozoa), contributes to soil organic matter also as microbial necromass, especially in ecosystems with lots of soil fauna (e.g. dung beetles, worms, termites) that quickly break down and mix manure into the topsoil, subsoil, and further down.

Implications for LCA accounting

Well-managed RA practices will improve soil health and structure, thereby increasing water infiltration and retention. Such practices will also increase plant growth, water vapour, and BVOC emissions. This will increase the relative humidity on such managed farms due to increased evapotranspiration from a greater plant biomass, which in turn will lead to greater OH formation and availability. Therefore, the atmospheric oxidation capacity will increase, resulting in faster oxidation of biogenic CH₄.

In terms of RA grazing, it doesn't just offset enteric CH₄ via soil carbon sequestration; it also offsets it by enhancing the atmospheric oxidation capacity of the troposphere due to increased OH formation and availability. To a lesser extent, there is also an increased capacity of the soil to oxidise CH₄ via both the methanotrophs and chemical processes.

In addition, with the increased biomass/biodiversity (plants, animals, microfauna, and the like) above- and belowground under RA management, there is substantial transfer of photosynthetically fixed carbon to higher trophic levels that should also be accounted for in LCA models.

Concluding remarks

The international LCA counting methodology, which calculates only CH₄ emissions, is inadequate and harmful to ruminant production, particularly cattle, which account for 70% of global enteric CH₄ emissions from ruminants. This should be revised to account for biogenesis and ways OH oxidation can be enhanced at the farm, ecosystem, and global levels. **LRF**

Article courtesy of *Stockfarm*, June 2026. Article developed from the blog lacheffnet.wordpress.com.
For other references and more information, send an email to heinz@milksa.co.za

Beskerm jou kudde teen beesbrusellose

Deur Christal-Lize Muller

Beesbrusellose is 'n komplekse siekte met 'n beduidende ekonomiese risiko vir beesprodusente, veral wat reproduksie betref. Veeartse doen daarom deeglik verslag daaroor op die landswye siekterapporteringstelsel wat deur Veearts Netwerk in samewerking met die Herkouer Veterinêre Vereniging van Suid-Afrika (RuVASA) en Rooivleisbedryfsdienste (RMIS) bedryf word.

Dr Danie Odendaal, direkteur van Veearts Netwerk, sê beesbrusellose is een van die vernaamste siektetendense onder melk- en vleisbeeste, sowel as skape en bokke. Dit is boonop een van die moeilikste siektes om te ondersoek en beheer. Siektevrye kuddes moet ten alle koste beskerm word. Die siekte benadeel nie net dieregesondheid nie, maar dit is ook soönoties en kan na mense oorgedra word.

Figuur 1 dui die verspreiding van *Brucella abortus*, die oorsaak van aborsies by beeste, oor die land heen aan vir die tydperk van April 2022 tot

Februarie 2026. Die rooi kolle beteken dat meer as tien voorvalle aangemeld is – dus 'n hoë-prioriteitsgebied. Die donkergeel kolle verwys na meer as een voorval en dui op 'n mate van bekommernis, terwyl die liggeel slegs een voorval aandui en geringe bekommernis aandui. Groen kolle beteken dat geen voorvalle aangemeld is nie.

Oorsaak van beesbrusellose

Dikwels besef produsente eers dat 'n koei met brusellose besmet is nadat sy geaborteer het. Dit gebeur ook dikwels dat 'n aborsie nie onmiddellik opgemerk word nie, veral wanneer dit in die veld plaasvind. Beesbrusellose word deur 'n intrasellulêre bakterie veroorsaak. Sodra die bakterie die sel binnedring, is dit vir die immuunstelsel uiters moeilik om dit te bereik en uit te werp. *Brucella abortus* skuil binne-in die selle en ontsnap só die dier se natuurlike verdedigingsmeganismes.

By beeste vind oordrag hoofsaaklik plaas deur die bek, wanneer diere aan baarmoeder-vloeistowwe,

'n geaborteerde fetus of nageboortelek of ruik. Besmetting kan ook deur die neus plaasvind via druppelbesmetting. Hoewel die organisme in melk, urine en mis uitgeskei word, bly die grootste bron van oordrag 'n dier wat geaborteer het. Een enkele koei wat aborteer kan 'n groot aantal ander koeie in dieselfde kudde besmet.

Sodra die organisme die liggaam binnedring, word dit in die bloed opgeneem en na spesifieke selle versprei. Die bakterie toon 'n besondere voorkeur vir selle in die geslagskanaal en uier. Daar bly dit gelokaliseer sonder onmiddellike sigbare probleme – totdat die dier dragtig raak.

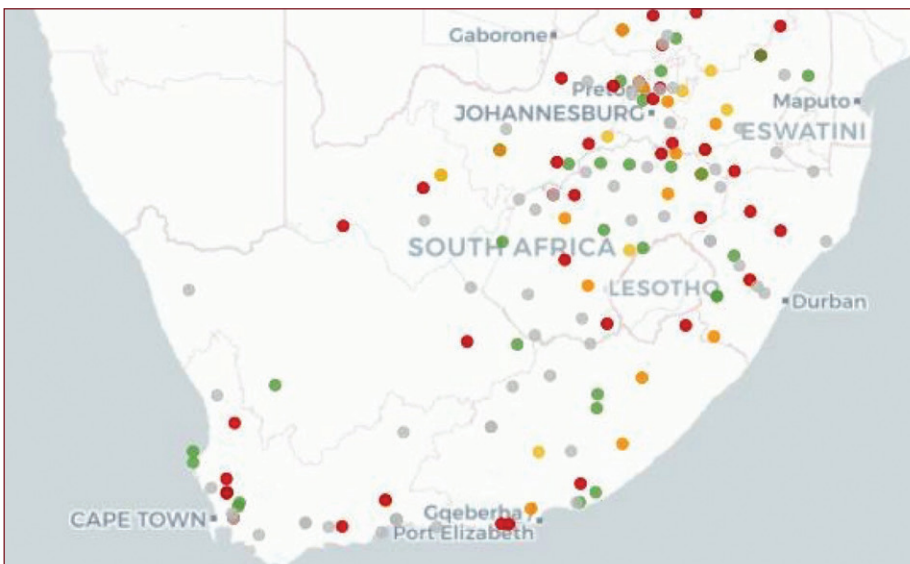
Met die verandering in hormonale vlakke tydens dragtigheid word die organisme weer geaktiveer. Dit teiken aanvanklik die witbloedselle en versprei daarna na die limfkliere, baarmoeder en lakterende uier. Die ontwikkelende fetus word uiteindelik aangetas, wat tot aborsie lei.

Uitskakeling van ander siektes

Volgens dr Odendaal vereis die diagnose van die spesifieke oorsaak van aborsies 'n gestruktureerde benadering asook die samewerking van 'n kuddeveearts. Soms kom aborsie-uitbrekings voor waar 'n groot aantal diere gelyktydig aborteer; dit kan vir produsente 'n ernstige krisis meebring. Daarom is dit noodsaaklik om 'n duidelike beginpunt vir die ondersoek te hê.

“Die algemeenste gebruik is om die fetus en nageboorte na die laboratorium te stuur, sodat 'n volledige paneel van toetse gedoen kan word om die oorsaak te bepaal,” sê hy. Hierdie proses is egter relatief duur. Boonop moet die fetus en nageboorte vars wees, anders het die resultate min waarde. Selfs dan lewer dit dikwels nie 'n definitiewe antwoord op die oorsaak van die aborsie nie.

Figuur 1: Verspreiding van *Brucella abortus* in Suid-Afrika, April 2022 tot Februarie 2026. (Bron: www.rmisa.co.za)



Die aanbevole benadering is om van meet af te fokus op siektes wat sistematies uitgeskakel kan word. Die belangrikste is geslagsoordraagbare siektes soos vibriose en trigemoniase wat albei aborsies kan veroorsaak. Deur hierdie siektes eerste uit te skakel, word 'n groot deel van die moontlike oorsake reeds uitgesluit. Die volgende groot probleem is dan brusellose. Die primêre sieketekene wanneer diere vir die eerste keer besmet word, is aborsie. Buiten dié tekene is daar egter min tot geen sigbare kliniese tekens nie.

Toetsing is belangrik

Beesbrusellose is 'n staatsbeheerde siekte en die staat speel 'n belangrike rol in die beheer en monitering daarvan. Dit is een van die redes waarom streeklaboratoriums reg oor die land gevestig is. "Ongelukkig funksioneer baie van hierdie laboratoriums nie meer so doeltreffend nie. Dit is 'n beperkende faktor wat betref die kapasiteit om betroubare toetse vir brusellose uit te voer."

Wanneer toetsing begin en bloedmonsters versamel word, is dit noodsaaklik om toetsresultate so vinnig as moontlik te ontvang; verkieslik binne 'n week en hoogstens binne twee weke. Diere wat positief toets moet geïdentifiseer en uit die kudde verwyder word. Dit is eenvoudig onaanvaarbaar dat die resultate met drie weke of selfs maande vertraag word, aangesien dit die risiko van verdere verspreiding verhoog.

"Brusellose word oor die algemeen goed deur stoetprodusente bestuur, aangesien hulle deeglik aandag gee aan beheermaatreëls en gereelde toetsing," sê dr Odendaal.

Beplanning en beheer

Daar bestaan geen behandeling vir beesbrusellose nie. Veral stoet- en melkprodusente moet saam met 'n kuddeveearts werk om die siekte doeltreffend te bestuur, en kuddes moet gereeld getoets word. Dit is nie volhoubaar om oor die lang termyn met 'n besmette kudde te boer nie.

"Goeie samewerking tussen die veeprodusent en veearts lê die grondslag vir goeie kuddegesondheids-

en biosekuriteitsbestuur op plaasvlak," sê dr Odendaal. Die eerste en belangrikste voorkomende stap is om die kuddestatus te bepaal.

Produsente moet sorg dat geen diere aangekoop word wat nie getoets en gesond verklaar is nie. Nie net die aangekoopte diere moet getoets word nie, maar die hele kudde waaruit daardie diere afkomstig is. Aangesien brusellose 'n kuddesiekte is, moet die bronkudde skoon wees. Aangekoopte diere moet in kwarantyn geplaas en weer getoets word voordat hulle by die bestaande kudde aansluit.

Buiten toetsing en die uitskot van besmette diere, bly inenting 'n kernpilaar van siektevoorkoming. Dit is egter 'n uitdaging, aangesien die entstof lewendig is. Stam 19-inenting van vervangingsverse vorm die basis van voorkoming en word slegs eenmalig toegedien aan verse tussen die ouderdom van vier en agt maande. Die entstof mag nie aan diere ouer as agt maande toegedien word nie, aangesien dit latere diagnostiese toetse by volwasse diere kan beïnvloed.

'n Verdere belangrike beginsel is dat die spuit wat vir hierdie lewendige entstof gebruik word, nooit vir ander doeleindes aangewend mag word nie. Weggooibare spuite word gebruik wanneer teen brusellose ingeënt word, aangesien residu wat in die spuit agterbly tot vals positiewe toetsresultate kan lei.

Dr Odendaal sê entstofbesikbaarheid het sedert 2023 aansienlik verbeter ná die registrasie van 'n plaaslike Suid-Afrikaanse verskaffer; dit verteenwoordig 'n belangrike deurbraak in die beheer van beesbrusellose. Vir produsente wat hul risiko verder

wil beperk, kan sekere versgroepe met die RB51-entstof ingeënt word. Hierdie entstof beïnvloed nie standaardtoetse nie, maar is aansienlik duurder en word hoofsaaklik op hoë-risiko plase gebruik. Die toediening daarvan behoort altyd in oorleg met 'n veearts te geskied.

Lewenslange draers

Beeste wat met brusellose besmet raak, ontwikkel nooit volledige immuniteit nie en bly lewenslange draers van die siekte. Al aborteer 'n koei nie weer nie, dra sy steeds die organisme en skei dit telkens uit wanneer sy kalf. Selfs al word 'n gesonde kalf gebore, bly die koei vir die res van haar lewe 'n bron van besmetting. Hierdie diere moet uitgeskot word om verdere verspreiding te voorkom. **LRF**

Artikel met vergunning van Veeplaas, Mei 2026. Vir meer inligting, kontak dr Danie Odendaal by 082 454 0532 of e-pos vnet1@absamail.co.za.



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Calf health from birth to weaning

By Koos du Pisanie

Every cattle producer depends on healthy calves to ensure profitability. Hands-on management of calves' health, from birth to weaning, is therefore essential.

According to Johan Mouton, technical manager of research and development at Molatek, weaning is a critical stage in a calf's life. It is therefore vital that calves are strong enough to withstand weaning shock. However, as Dr Leon Kruger, livestock scientist at the University of the Free State, points out, calf health should not only be addressed shortly before weaning – it requires attention right from birth.

Start at the beginning

Most calf diseases and mortalities occur within the first month after birth. The more intensive the cattle production system, Dr Kruger explains, the greater the focus must be on disease prevention and treatment.

"The umbilical cord should be disinfected as soon as possible after birth, particularly in dairy calves. A newborn calf must receive colostrum equal to 10 to 12% of its bodyweight within the first two hours of life (3 to 4ℓ for a 30 to 40kg calf). This provides essential antibodies to protect against infection, as well as the energy needed to regulate body temperature. A second feeding of around 2ℓ should follow 12 hours after birth."

Poor colostrum management, failure to recognise early signs of illness such as diarrhoea and pneumonia, and inadequate parasite control are common contributors to diseases in calves.

Smart weaning practices

Calves are typically weaned at seven to eight months of age, when they weigh roughly 220kg. However, as Mouton explains, there is no one-size-fits-all approach. Production systems, grazing conditions,

frame size, and breed all influence the ideal weaning strategy.

"Producers often choose to wean calves earlier, especially during droughts or when cows have a low body condition score. While this may seem practical, it can increase the risk of challenges later in life." Instead, producers should use indicators such as cows that have passed peak milk production, and calves that are grazing well and capable of sustaining themselves. A common approach is to leave calves with their mothers until natural weaning occurs. Ultimately, the producer's decisions should balance cashflow, fodder flow, and cow condition.

Although weaning stress is a common concern for producers, Mouton notes that it does not have to be a major problem if calves are properly managed from birth. "Weaning activates the animal's survival instinct and encourages independence. A smooth weaning process begins with a cow that was well managed during late gestation and that produces enough milk for a strong, healthy calf."

A few weeks prior to weaning, producers can start providing a palatable production lick to cows, at the same time allowing the calves to become familiar with it. Where calves move directly from a veld-based system to a feedlot, they can be offered a creep feed ration approximately 30 days before weaning to help them adapt to feedlot conditions. After weaning, they can continue with the same lick as before weaning.

Dr Kruger says that by weaning time, calves should already be accustomed to a feed trough. The ration provided should be the same as the creep feed they know and must be adjusted gradually.

A calf vaccination programme

Weaning means the calf is separated from its mother and the regular feeding routine to which it is accustomed.

At the same time, the emotional stress of the process makes the calf more susceptible to disease.

Because farming conditions and rainfall zones vary widely in the different regions, there is no single rule of thumb when it comes to disease control. A tailored vaccination programme is therefore essential.

Clostridial diseases such as botulism, tetanus, and blackleg can be prevented through a well-managed vaccination programme. Vaccination against *Brucella abortus* and anthrax is legally required. In addition, protection against vectorborne diseases such as three-day stiffness, lumpy skin disease and Rift Valley fever is recommended, as complete control of the insect vectors that transmit these diseases isn't possible.

Dr Kruger advises producers to consult animal health experts to develop a vaccination programme suited to their farm.

A final thought

Mouton says shortly before weaning calves should be introduced to the conditions they will experience after weaning. "Be careful not to neglect calves after weaning. During the first winter post weaning, calves should receive a production lick on good veld. This supports frame development and lays the foundation for a productive reproductive life."

Dr Kruger adds that calves should become accustomed to being handled, especially in the crush, from a young age. This ensures less stress during the weaning process. "Calves are already under pressure when they are being handled," he says. "Don't exacerbate the situation with rough handling and noise." **LRF**

Article courtesy of Stockfarm, April 2026. For more information, contact Johan Mouton at 083 278 7746 or Dr Leon Kruger at 082 663 2664.

Ideale kondisietelling en voeding vir veilingsbulle

Deur dr Hinner Köster, Hinner Koster Consulting (Pty) Ltd

Liggaamskondisietelling (LKT) is 'n belangrike bepaler van die verkoopswaarde en naverkoopsprestasie van vleisrasteelbulle, maar word dikwels oor die hoof gesien. Kopers verkies bulle wat sterk en atleties voorkom, eerder as maer of oorvoed. 'n Gebalanseerde LKT ondersteun vrugbaarheid, uithouvermoë en strukturele gesondheid, en ondersteun die suksesvolle oorgang van die ontwikkelingsfase na teeltroppe op natuurlike weiding.

Die bekende LKT-skaal vir beeste in Suid-Afrika wissel van 1 (uitgeteer) tot 9 (uiters vet). Voordat verkoopsgereed teelbulle in kuddes met vroulike diere geplaas word, moet hulle oor 'n LKT van tussen 5,5 en 6,5 beskik, met 6 as die ideaal. Hierdie telling voorsien genoeg energiereserwes vir die gewigsverlies wat tydens die eerste teelseisoen voorkom, sonder dat vrugbaarheid, beweeglikheid of hitteverdraagsaamheid ingeboet word. Monitor gereeld liggaamskondisie deur elke 30 dae praktiese kondisiepunttellings te doen.

Jonger bulle se semengehalte is dikwels swak en hul dekkingskapasiteit laag, terwyl ouer bulle meer vatbaar is vir termoregulering- en gesondheidsprobleme.

Belangrikheid van vetneerlegging

Oorgekondisioneerde bulle lê oortollige vet in sekere dele van die liggaam neer, wat gebruik kan word om oormatige LKT visueel te bepaal. Vetaanpakking in die bors en nek dui op oortollige kondisie. Hierdie oormatige vet kan tot hitte-lading bydra en die dier se beweeglikheid beperk. Sagte, sponsagtige vet in die area van die stertwortel en flanke (tussen die laaste rib en heup) dui op 'n LKT van 7 of hoër.

'n Gladde, plat voorkoms oor die ribbes en ruggraat – sonder dat die ribbes tasbaar is – dui op 'n LKT van tussen 6,5 en 7. Vet rondom die skrotum belemmer hitteverlies, verhoog testikulêre temperatuur en benadeel semenmotiliteit en -morfologie. Boonop kan vet in die skede die verlenging van die penis beperk en die risiko van beserings verhoog.

Oor- en onderkondisionering

Vet om die skrotum benadeel termoregulering, wat gevolglik tot 'n agteruitgang in semengehalte lei. Veranderinge in voeding beïnvloed spermatogenese oor sowat 60 dae; daarom word veranderinge eers later sigbaar.

Oortollige gewig en swak fiksheid verminder ook 'n bul se uithou- en dekkingsvermoë, aangesien die dier vinniger moeg raak. Swaar bulle wat op hoë-stysel diëte grootgemaak is, is meer geneig tot sagte en/of uitgroeihoewe, laminitis en witlynsiekte. Hierdie probleme duik dikwels eers ná verkoop op, wanneer die bulle meer op natuurlike weiding moet beweeg.

Bulle wat op hoë-stysel diëte afgerond is verloor dikwels vinnig kondisie wanneer hulle na natuurlike weiding oorgeskakel word. Wanneer bulle dan 'uitmekaarval' benadeel dit kopervertroue en teelprestasie. Kopers diskrimineer toeneemend teen 'skouvet'-bulle op veilings, veral wanneer twyfel bestaan oor hul vermoë om in werklike teelprogramme op die plaas te presteer.

Maerder, jong bulle met 'n LKT van 4 of laer bereik gewoonlik later puberteit, het 'n kleiner skrotumomtrek en produseer minder sperms. Lae energiereserwes beïnvloed ook uithouvermoë, aangesien bulle vinniger moeg raak wanneer hulle moet teel, wat kan lei tot 'n toename in ongedekte koeie.

'n Prominente ruggraat en ribbes dui op stres of swak bestuur. Kopers beskou hierdie tekens dikwels as 'n rooi vlag wat algehele prestasie betref.

Verkoopvoorbereiding

Tydens die ontwikkelingsfase moet die fokus op die liggaamsraam, spiere en gesondheid wees, eerder as die vet. Mik vir konstante, matige groei (sowat 0,9 tot 1,1kg/dag) deur middel van 'n goeie weidingsuitgroeiprogram. Sorg vir genoeg konsentraataanvulling wat die weidingsgehalte op enige gegewe stadium komplimenteer om gewenste groei te handhaaf.

Wat energie betref behoort veselgebaseerde bronne – soos hoë-gehalte hooi of kuilvoer, en neweprodukte soos sojadoppe en koringsemels, asook beperkte hoeveelhede

chop of mielies – eerder as hoë mieliegebaseerde rantsoene gebruik te word. Dit bevorder 'n rumen wat maklik na 'n weidingsdieet kan oorskakel.

Bulle van 12 tot 24 maande benodig 11 tot 13% goeie gehalte ruproteïen (op 'n 100% droëmateriaal- of DM-basis) in die totale dieet, wat aangepas kan word met hoë-gehalte ruvoer en/of aanvullings soos nodig.

Voer 'n gebalanseerde mineraal- en vitamienvoormengsel met voldoende kalsium en fosfor (sowat 1,5 tot 2:1 Ca:P); kernspoorminerale soos koper, sink, seleen, en mangaan vir vrugbaarheid en hoefgesondheid; vitamien A, D en E; asook biotien. Implementeer 'n hoë-gehalte spoormineraal-program tussen 60 en 90 dae voordat die bul verkoop word om spermatogenese te ondersteun. Tussen 30 en 40% van die spoorminerale kan in organiese vorm verskaf word.

'n Soutaanvulling en voldoende skoon water is noodsaaklik vir inname en termoregulering. Bulle moet ook genoeg ruimte hê om te beweeg sodat hul hoewe en bene kan versterk. Vermy lang tydperke op sagte oppervlaktes, en berei bulle voor deur konsentrete in die veld aan te vul.

Oorgang na natuurlike weivelde

Hoe 'n bul gedurende die eerste vier tot agt weke ná aankoop bestuur word, bepaal hoeveel van sy genetiese potensiaal uiteindelik in sy vroulike diere se dragtigheidsyfers weerspieël sal word. Indien verkoopbulle se voerprogram konsentrete ingesluit het, behoort die voeding geleidelik oor 'n tydperk van twee tot drie weke verminder te word, terwyl die bulle aan die nuwe plaas se voerprogram gewoond gemaak word. Skielike veranderinge kan tot 'n daling in voerinname en oormatige gewigsverlies lei.

Weidingsgehalte dryf aanvulling. Op goeie, jong lente-weiding kan energie en proteïen voldoende wees vir volwasse bulle, maar jong bulle wat nog groei benodig steeds 'n weidingsvriendelike konsentraat van 1 tot 1,8kg per dag, met nutriënte wat die spesifieke weiding komplementeer en die inname daarvan stimuleer. Waar weiding of ruvoer egter dormant of van lae gehalte is, moet 'n proteïen-, energie- en mineraalaanvulling voorsien word om 'n LKT van minstens 5 deur die teelseisoen te handhaaf. Die aanvulling kan byvoorbeeld 'n produksielek wees van 1 tot 1,5kg per dag; die tipe en hoeveelheid sal egter afhang van die seisoen en die beskikbare weidingsgehalte.

Voorsien 'n volledige mineraal- en vitamienmengsel met voldoende koper, sink en mangaan (oorweeg organiese/gecheleerde bronne rondom die teelseisoen) asook seleen volgens plaaslike regulasies en die vlakke wat in weidings voorkom. Vitamien A en E speel ook 'n belangrike rol, veral wanneer weiding verweer of laag in karoteen is.

Hittesres ondermyn libido en semengehalte. Dit is daarom noodsaaklik om voldoende skaduwee en skoon water te voorsien om testikulêre temperatuur en algehele voer- en waterinname te beskerm.

Doen 'n teelgereedheidstoets voordat bulle by die teeltrop gesit word. Doeltreffende parasietbeheer en toepaslike inentingsprogramme dra by tot optimale prestasie. Hou in gedagte dat semengehalte en -hoeveelheid

'n direkte weerspieëling is van die voorafgaande twee maande se bestuur.

Bulle verloor dikwels tussen 10 en 15% van hul liggaamsgewig gedurende hul eerste teelseisoen. Wanneer 'n bul met 'n LKT van 6 aangekoop word, moet goeie bestuur toegepas word om te voorkom dat dit onder 5 daal.

Die regte kondisionering

Slim kopers wat op soek is na duursame genetika, beloon gewoonlik bulle wat atleties en duursaam lyk. Bereik en handhaaf daarom 'n LKT van sowat 6 teen verkoopstyd asook gedurende die teelseisoen. Dit beteken minder probleme ná verkoop, 'n hoër konsepsietempo en tevrede kliënte wat weer terugkeer vir toekomstige aankope.

Ongelukkig stuur baie kopers die verkeerde sein uit wanneer hulle premies by veilings betaal vir oorgekondisioneerde bulle eerder as vir goed-ontwikkelde, funksionele, weidingsgereed bulle met 'n gematigde kondisie. Dit plaas onnodige druk op verkopers om bulle oormatig te voer, wat weer tot hoër voeruitgawes lei. Vetbedekking kan boonop onderliggende strukturele gebreke, swak vrugbaarheid en werksvermoë verdoesel. **LRF**

Artikel met vergunning van Veeplaas, Mei 2026.
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The value of stud breeding in South Africa

By Charné van Zyl, technical assistant, Simbra Southern Africa

In the South African agricultural landscape, transitioning from commercial beef production to registered stud breeding characterises a shift synonymous to that of transitioning from a commodity-based enterprise to a high-value genetic technology firm.

With approximately 71% of South Africa's agricultural land suitable for extensive livestock grazing, the livestock used need to be efficient at turning low-quality, high-fibre veld into high-quality protein. The stud breeder is at the top of the value chain, providing the genetic 'blueprint' that drives that efficiency.

Economic value

Stud breeding creates value through genetic premiums. A registered bull or pregnant heifer is an asset that appreciates in value. Unlike a slaughter animal, its value lies in its potential to produce offspring, often fetching much higher prices than its meat value. Additionally, the market for registered breeding stock is not linked to the fluctuating rates of other sectors in the beef industry.

Therefore, when other sectors may become subjected to price fluctuations during economic downturns, high-quality genetics remain in demand as commercial producers seek 'herd improvers' to maintain or improve their own efficiency and drought resilience.

Technical precision using data

A stud is defined by its data, not just its fences. The value of a stud operation therefore lies in the commitment to record as much data as accurately as possible. Thereafter it lies in the transformation of that raw biological data into estimated breeding values (EBVs) and/or genomic profiles. With genetic evaluation tools provided by service providers, such as the Livestock Registering Federation (LRF) or SA Stud Book, breeders can predict the performance of

future generations for economically important traits such as weaning weight, fertility and meat quality, to name a few.

Notably, the industry is also moving beyond visual appraisal to single-step genomic EBVs. One of the most remarkable benefits of this progression is that of predicting a calf's future performance for specific traits with over 80% accuracy, once it is SNP genotyped. This can reduce the generation interval, allowing for faster genetic progress.

Additionally, during a time when foot-and-mouth disease (FMD) remains a challenge, the meticulous record-keeping of a stud (DNA parentage verification and movement history) provides a 'biosecurity passport' that commercial buyers are willing to pay for.

Leveraging hybrid vigour

With the global climate evolving, demand growing from consumers for livestock that are climate-smart, and the biological need for a growing population to have access to protein, stud breeders face the unique challenge of offering commercial producers genetics that are adaptable and efficient without compromising on growth.

In recent years, the South African market has been paying more attention to composite breeds. These breeds leverage heterosis, or hybrid vigour, often combining the climate resilience of indigenous *Bos indicus* breeds with the growth ability and meat quality of *Bos taurus* breeds. For a stud breeder, this translates to producing an animal that can survive a drought while still putting on enough weight to meet the requirements of most feedlots and abattoirs.

Strategic impact

The South African beef industry is currently aiming to increase exports to the Middle East and Southeast Asia. These international markets demand consistency, and stud breeders are the gatekeepers of this consistency. With an objective to produce bulls that lower the average age of slaughter and improve feed conversion ratios, stud breeders can be the primary drivers of South Africa's goal to become a net exporter of premium beef.

Becoming a stud breeder in South Africa is a strategic investment in a highly resilient agricultural sector. Despite high capital requirements and rigorous administrative demands, the ability to market proven performance and resource-efficient genetics – rather than just bulk kilograms – provides a level of financial and professional sustainability that is difficult to match. **LRF**



Photograph: Mar-Louise Bezuidenhout.

Article courtesy of Stockfarm, May 2026.
Google Gemini AI was consulted for this article. For more information, send an email to charne@simbra.org or visit www.simbra.org

New FMD research challenges slaughter rules and could reduce industry costs

New research by the University of Pretoria (UP), in partnership with Red Meat Industry Services (RMIS) and Zoetis, is challenging South Africa's current slaughter regulations for cattle recovering from foot-and-mouth disease (FMD). The findings suggest that cattle slaughtered 16 days after recovery may pose a much lower disease risk than previously assumed.

The research forms part of the 5th Quarter Research Project, led by Prof Armanda Bastos, director of UP's Hans Hoheisen Research Centre in the Department of Veterinary Tropical Diseases. The project was launched in August 2025 to investigate whether parts of cattle carcasses considered high risk under FMD regulations – including the head, feet, tongue and offal – continue to pose a disease risk after the animals have recovered from infection.

Study design and findings

The study involved 90 cattle from FMD-infected premises. All 90 animals were confirmed to have been infected with FMD and were vaccinated seven to nine days later to establish a defined 'day zero'. The cattle were then sent for controlled slaughter 16 days after day zero, in line with the current minimum waiting period. Researchers collected 1 800 samples from the animals and tested them using polymerase chain reaction (PCR), followed by additional testing to determine whether any viral material detected was still infectious.

The results provide evidence against some of the existing slaughter requirements. No infectious FMD virus was found in any of the samples tested. Importantly, no viral material was detected in bone marrow, despite regulations requiring carcasses from recovered cattle to be deboned before the meat can enter the market. The virus was also not detected in the

spleen, kidneys or mesenteric lymph nodes. Although PCR testing detected viral material in one tongue and three lung samples, further testing found that the material was not infectious.

According to Prof Bastos, the findings indicate that deboning, deglanding and the disposal of tongue and offal may not be necessary when fully recovered cattle are slaughtered under controlled conditions from 16 days after day zero. Deboning, in particular, is considered expensive and difficult for slaughterhouses to carry out, creating a financial and logistical burden for the industry.

The research also supports a proposal to replace the current two-stage controlled slaughter system with a single slaughter phase. Prof Bastos has proposed that this phase should apply to recovered cattle slaughtered between 16 days and three months after day zero. Such a change would provide producers and abattoirs with greater flexibility.

Research could shape future policy

The findings have also intensified calls for South African authorities to update FMD regulations more quickly in response to scientific evidence. Prof Bastos said regulatory and administrative processes had delayed the start of the 5th Quarter Research Project by about eight months, slowing the production of data needed to inform policy. With FMD outbreaks continuing to affect livestock production and trade across South Africa, she argued that research and regulatory processes need to move more quickly to limit economic losses and protect jobs and revenue in the red meat industry.

The research is not yet complete. The next phase will examine high-risk sites in the head, where low levels of FMD virus have previously been shown to persist in cattle that become carriers. This work is expected to provide further

information for assessing the risks associated with different carcass parts and could help refine future slaughter and disease-control regulations.

Prof Bastos stressed that South Africa still faces challenges in controlling FMD and regaining its former FMD-free status. The country would need to vaccinate around 80% of its estimated 14 million cattle, while increasing laboratory capacity for post-vaccination monitoring. Other priorities include preventing the reverse infection of FMD-free buffalo by cattle, addressing FMD in pigs and reviewing the slaughter regulations that apply to pigs, as well as considering regional approaches to ensure vaccines are directed to areas where they can have the greatest impact.

RMIS is supporting the national vaccination campaign through its data exchange platform and vaccine-ordering portal. Livestock industry organisations will collect vaccine requirements from producers, while farmers' veterinarians or veterinary practices will place orders for allocated vaccines through the portal. Vaccine distribution will be tracked using QR-code technology linked to farm location identifiers.

The 5th Quarter Research Project provides evidence that some of South Africa's FMD slaughter requirements may be stricter than necessary for fully recovered cattle. While further research is needed, the findings could support science-based regulatory changes that reduce costs for the livestock industry without compromising disease-control measures. **LRF**

Adapted from "New FMD research supports changes to slaughter rules" by Hanlie du Plessis and "Study finds recovered FMD cattle pose lower risk, opening door to cost-savings for industry" by Yogashen Pillay.



Cattle genomics: Heterosis boosts the bottom line

By Dr Troy Rowan

Sometimes, I get ahead of myself as a beef cattle genomics researcher. I'm always thinking about the 'next big thing', or the next major step forward in the genetics and genomics space. While those occasionally happen (for example, the development of expected progeny differences or EPDs in the 1970s or genomic-enhanced EPDs in the 2010s), there are typically a host of 'little things' that we can do in our operation on the genetics side, that, when done together, make a big impact on a herd's profitability.

When I'm asked what genetic strategy or technology would generate the greatest influx of profit into the beef industry, my answer isn't the shiniest new genomic test or even the universal adoption of EPDs. It's more crossbreeding. Geneticists have long known that when we breed two divergent lines with one another, the progeny often outperform the average of their parent's phenotypes. The biological cause of this phenomenon, heterosis, has not been nailed down completely.

Despite the unclear underlying biology, one fact is clear: It works!

Crossbreeding, when used in conjunction with well-defined breeding goals, has the potential to improve every economically relevant trait in your herd.

According to a 2008 United States Department of Agriculture (USDA) report, only 45% of commercial cow herds were utilising any form of crossbreeding, a number that has likely dropped in the years since. It is always surprising to me that so many commercial producers leave money on the table by failing to leverage crossbreeding in their operations. While other management interventions harbour additional implementation costs, the gains realised from crossbreeding are effectively pure profit!

Heterosis delivers across traits

Heritability, or the proportion of variation in a trait attributable to genetics, varies across traits. For a given trait, the increase in crossbred progeny performance compared to the average of its purebred parents' performance (heterosis) is inversely related to heritability. This means that for high-heritability traits like carcass quality, heterotic gains are typically small (0 to 5%).

Crossbred calves have been shown to have weaning and yearling weights ~4% higher than their parent's average (Cundiff and Gregory, 1999). While this may seem modest, my cowboy math suggests that implementing crossbreeding could add another \$30 to \$50 per head in weaned calf weight. Multiply this across an entire herd and suddenly we are talking about significant gains to our bottom line.

For lowly heritable traits such as fertility, cow longevity and health, crossbred animals can experience heterotic gains of >25% compared to their parent average. Cundiff and Gregory (1999) estimated that a crossbred cow would produce, on average, one more calf and wean off at least 600 more pounds of calf weight compared to a purebred counterpart over the course of their lifetimes. These effects of heterosis make multi-generational crossbreeding an attractive way to capture not only the individual performance gains of an F1 calf but even greater returns from maternal heterosis in replacement females.

Match breeds to maximise gains

As with any decision on the farm, we are always best served by approaching

crossbreeding decisions with a plan in mind. Simply turning out a different breed of bull doesn't guarantee that you'll observe any performance or economic gain. Not every cross actually makes sense. An F1 Angus x Miniature Hereford calf will likely outperform its parental average for weaning weight, but it won't outperform a straight-bred Angus calf.

When crossbreeding, matching complementary breeds is a great way to both exploit heterosis and the additive differences that exist between breeds (e.g. Charolais growth + Angus marbling and calving ease). Gains due to heterosis will also be greater in crosses between more divergent breeds. An Angus x Red Angus (two closely related breeds) cross will have substantially lower heterosis compared with an Angus x Brahman cross (two different subspecies).

Introducing crossbreeding into your herd can be as simple or complex as necessary. We often

think about heterosis in the context of producing terminal F1 animals. While individual heterosis is maximised in the F1, it is possible to retain heterosis across multiple generations using rotational crossbreeding systems or advanced generation crosses. Complex rotational crossbreeding systems with more breeds will require a more hands-on approach and greater logistical planning, but will result in greater retained heterosis for both individual and maternal traits.

Paths to retain heterosis

An easier way to exploit heterosis in your herd, outside a defined crossbreeding plan, is to use composite females and a regularly rotating set of bulls. Composite females have long been popular in some commercial herds as a way to leverage heterosis in maternal traits. Further, *Bos taurus* x *Bos indicus* composite females have long been popular in heat-stressed environments.

Recently, many major breed associations have opened their herd books to composite animals (i.e., the American Simmental Association and International Genetic Solutions). In doing so, they have enabled multi-breed genetic evaluations, making it possible to calculate accurate EPDs for crossbred animals. These more accurate selection tools make using crossbred bulls (SimAngus, LimFlex, Balancer, etc.) a practical way to introduce additional heterosis into herds.

While we as researchers are still trying to understand the exact biological basis of heterosis, the gains resulting from crossbreeding are undeniable. By combining breed complementarity and heterosis, producers can increase the performance of their calf crop and replacement females for virtually every economically relevant phenotype. **LRF**

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BGP2: Update on LRF initiatives

During year six of the Beef Genomics Project (BGP2), the LRF implemented several initiatives to improve service delivery, sample quality, and operational efficiency. These included strengthening quality control measures for South African samples submitted to the Biotechnology Platform (BTP), introducing a barcode-based system to enhance sample identification and traceability, and developing a standard operating procedure (SOP) for heat treatment of samples prior to genotyping.

The SOP was distributed to participating breed societies to promote consistent sample-handling practices. In addition, the LRF requested the involvement of technicians from the Agricultural Research Council (ARC) to support Kaonafatso ya Dikgomo (KyD) sample collection, with the aim of improving field sampling practices and sample quality.

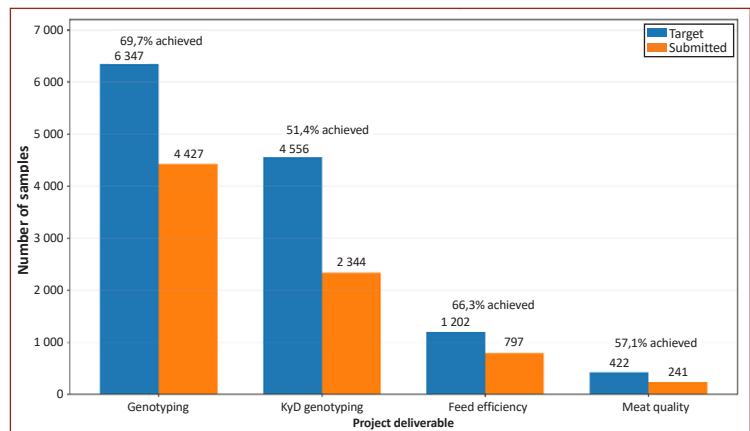
Figure 1 indicates that, to date, the project has reached 7 809 sample submissions against a cumulative target of 12 527, reflecting an achievement rate of 62,3%. Within the genotyping deliverable, 4 427 samples have been submitted against a target of 6 347, resulting in a shortfall of 1 920 samples. Although meaningful progress has been made, additional submissions are required to meet the planned target.

The KyD genotyping component recorded 2 344 submitted samples against a target of 4 556, representing a shortfall of 2 212 samples. This is the largest gap across the deliverables and highlights the need for targeted interventions to accelerate sample collection and submission.

For the feed efficiency deliverable, 797 samples have been submitted against a target of 1 202, leaving a shortfall of 405 samples. Similarly, the meat quality deliverable achieved 241 submissions against a target of 422, resulting in a shortfall of 181 samples.

The project has achieved approximately 62,3% of its cumulative sample submission target, but gaps remain across all deliverables. KyD genotyping represents the most significant area requiring attention, followed by the genotyping component. Sustained stakeholder engagement, improved sample collection and submission processes, and increased participation will be essential to close these gaps and improve project performance against the planned targets.

Figure 1: Project sample submissions, target vs submitted.



Introducing the Livestock Sustainability Programme

The South African Livestock Sustainability Programme (LSP) builds on and extends the work and achievements of BGP1 and 2. While BGP2 primarily focusses on genomic improvement, performance recording and the development of genomic reference populations in the beef industry, the new programme expands this approach into a more comprehensive livestock initiative encompassing the beef, dairy, sheep and goat sectors, while also including climate-smart measurements, notably methane emissions.

The programme is designed as a 15-year long-term initiative, recognising that meaningful genetic improvement, the establishment of robust genomic reference populations and measurable improvements in sustainability require sustained investment and long-term data collection. It will bring together breed societies, research institutions, emerging farmers, stud breeders and other industry partners, including the Department of Agriculture and Red Meat Industry Services (RMIS), to support collaboration across the South African livestock sector.

Over the 15-year implementation period, the programme will continue to strengthen the use of genomic technologies, performance recording and local production data. The programme will focus on establishing and maintaining genomic reference populations and on collecting data on economically important and difficult-to-measure traits, including feed efficiency, net feed intake, methane emissions, fertility, and carcass or product quality, using the CUP system. This information will support the development and refinement of genetic and sustainability selection tools specifically relevant to South African production environments.

The programme also places strong emphasis on the inclusion of emerging farmers in the livestock value chain. Building on initiatives such as KyD, emerging farmers will be supported through improved access to genetic services and technologies, strengthening their participation in performance recording, genetic improvement and sustainable livestock production.

Ultimately, LSP represents the next phase of development beyond BGP2, expanding its successful genomic and data-driven approach from the beef sector into a broader, integrated livestock programme. Over its 15-year lifespan, the programme aims to contribute to a more sustainable, climate-smart, genetically improved and internationally competitive South African livestock industry.

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HerdMASTER 6 begins rolling out from Q4 2026. Clients who register their interest now will receive early access and updates as their region comes online. Get ready for a modern herd management experience built for the future.

A reminder that helpful HerdMASTER tutorials are available to assist you with imports, troubleshooting, tipsheets, and much more (follow the link provided to access these resources). These guides are designed to make your experience smoother and more efficient, so don't miss out on the support available at your fingertips. **LRF**

Monthly tipsheet and video series

We are excited to announce a new monthly tipsheet and video series. Throughout 2026, our monthly tipsheets will focus on practical aspects of performance recording, EBVs, genetic improvement, and BREEDPLAN tools to help breeders strengthen herd management and decision-making. Each month, a one-page tipsheet and video will be released covering all the information you need to know. Topics we have covered so far include performance recording, interpreting EBVs, EBV accuracy, selection indexes, and genetic improvement.

Access the tipsheets and watch the videos here by clicking on the blocks:

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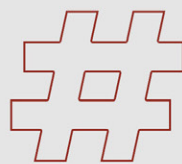
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Simbra: A value proposition underpinned by animal science



By Charné van Zyl

Simbra cattle in Southern Africa continue to grow in popularity due to their exceptional weaning performance, standout fertility, adaptability to diverse environments and climates, and superb feedlot performance. The breed is a true all-rounder that adds value across a range of production systems.

The value of the Simbra breed

Simbra is a medium-framed composite of the taurine and indicus base breeds. Due to these distinct genetic differences, Simbra benefits from hybrid vigour, or heterosis, meaning that F1 Simbra progeny can outperform both parent breeds in traits such as fertility, adaptability, growth, and growth rate. With steady continued crosses, the breed benefits from retained heterosis.

Taurine genetics contribute to good mothering ability and high milk production in the Simbra. This is evident in the high weaning rates and weights for which Simbra cattle are known. This also contributes to further growth, given the moderate positive correlations among the growth traits (birthweight, weaning weight, yearling weight, final weight, and mature cow weight).

The indicus genetics contribute adaptability, disease resistance, and hardiness. Both base breeds contribute genetics for efficient beef production and heavy carcass weights. The Simbra breed is also characterised by smooth coats that hinder tick attachment and foster adaptability. Another characteristic resulting from hybrid vigour is that the Simbra breed is highly fertile, as evidenced by high conception rates and shorter inter-calving periods.

With all these characteristics encoded in Simbra genetics, the breed is well suited to adapt to the subtropical climate and semi-arid environment of Southern Africa without compromising fertility, production yields, product quality, or animal welfare. Thus, it not only adapts physically to the environment but also to the production systems and beef markets of Southern Africa.

The value of Simbra SA

The Simbra Cattle Breeders' Society of Southern Africa (Simbra SA) distinguishes itself through a bottom-up approach to improving the sustainability of selection and management practices at farm level. By integrating scientific methods with production realities, the society considers key factors such as market demand, natural resource

management, animal welfare, productivity, efficiency and optimisation, and ongoing research and development.

Recognising that the whole is greater than the sum of its parts, Simbra SA prioritises not only the success of the breed, but also the sustainability of the beef industry. With a growing global population and finite natural resources, livestock production must become more efficient while safeguarding veld health, genetic diversity, and animal welfare. Achieving this at scale requires collaboration, and Simbra SA actively promotes the sharing of knowledge and resources across the industry.

A key focus area is the implementation of genomic technologies. Simbra SA encourages the use of SNP genotyping and has recently introduced single-step genetic evaluations, enabling more accurate estimated breeding values (EBVs) and improved selection decisions. For producers, this translates into greater precision in breeding programmes. For consumers, it means more consistent delivery of desirable traits.

Simbra SA also recognises that genetic progress depends on maintaining sufficient genetic variation. To this end, the Society operates an open herd book system, ensuring a broad gene pool and preventing the loss of genetic diversity or reproductive fitness. The continued inclusion of the base breeds further supports genetic flexibility and long-term improvement.

In addition, the Cum F0 register allows for the introduction of suitable female animals into the breed. These include F1 crosses from registered Simmentaler or Brahman bulls with Sanga, Sanga composite, Zebu, Zebu composite, or *Bos taurus* females. This system enables new breeders to establish Simbra herds without the immediate need to acquire multiple registered animals.

Conclusion

The Simbra breed combines high fertility, adaptability, strong weaning performance and carcass yield into a highly efficient breeding and production animal. When supported by the strategic vision of Simbra SA – emphasising collaboration, sustainability, research, genomic advancement, and genetic diversity – these attributes form an ecosystem that delivers and strives for value across the entire supply chain. Ultimately, Simbra offers a balanced solution that benefits breeding, the environment, producers, industry stakeholders, and consumers.

For more information, contact Kobus Bester at 083 303 4422 or office@simbra.org



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