Brahmans are investing in meat quality

The South African Brahman Cattle Breeders Society and the Namibian Brahman Breeders Society have collaborated under the Southern African Brahman Breed Improvement Forum over the last few years to assess the meat quality of Brahman cattle. Various studies have been carried out with two leading South African meat scientists, namely Prof Phillip Strydom (Stellenbosch) and Prof Arnold Hugo (University of the Free State). Meat quality will be one of the future aspects to gain maximum return in niche markets.

Given the importance of meat quality, these two Brahman breed societies felt it necessary to debunk the myths pertaining to "the tough meat of humped cattle", as feedlots and other institutions tend to discriminate against Brahman beef. In this regard, the Brahman societies received the results of the data of four groups of cattle slaughtered and tested for meat quality at different facilities.

The first group constituted 203 samples accumulated during the Beef Genomics Project (BGP) between 2015 to 2017 and tested at the ARC Animal Production Institute. The data of the second group, consisting of 51 samples, was generated from a Phase C and D test at Bufland, with samples tested at the University of the Free State.

Data from the third group of 24 bulls were generated from tests for net feed intake at the test facility of Koos Kooy, director of Livestock Alliance (Pty) Ltd in KwaZulu-Natal. The last group's data was generated at the private GrowSafe feed efficiency test facility of Thys Meyer in Lindley and tested for meat quality at the University of the Free State.

In the first group, quite a number of seven-day-aged meat samples came from young bulls tested for feed efficiency at the GenTecSol test station near Hochfeld in Namibia. These

38

Brahmans are investing in meat quality

37 bulls were slaughtered at Meatco. Out of the 10 most tender samples, 6 came from Namibian genetics. A wide range of meat tenderness from the different samples was obtained as tested with the Warner-Bratzler shear force test. The most tender sample had a shear force value of 2,1 kg (restaurant quality if below 3,9 kg) and the toughest sample had a value of 10,7 kg. This clearly shows that genetics are available to improve the meat tenderness trait. The shear force threshold value for the retail market is 4,6 kg.

The results of some of the tenderness tests evaluated at the University of the Free State varied from 1,45 kg to 3,94 kg which implied that only one sample did not reach the restaurant industry requirement of 3,9 kg. All of them reached the retail market requirement of 4,6 kg. Prof Hugo's observation: "The absence of dark cutting meat is a sign of excellent animal temperament, good transport conditions and proper handling prior to slaughter. The absence of dark cutters is usually a clear indication that stress was limited."

Since samples from other test stations up to 40% qualified for the retail market, the Brahman Breed Society has made it a priority in the next round of the beef genomics programme to place more emphasis on this trait. The aim is to identify genetics to improve the meat tenderness trait and deliver a better product to the market.

Two important messages

Producers need to take note of the fact that variation within the breed does exist, which implies that selection for tenderness can be done, and that, according to Prof Hugo, there was no indication of a significant correlation between hump height and tenderness.

As we know, Zebu-type cattle generally suffer under the misconception that the higher the hump, the tougher the meat. However, results from these studies have shown Zebu-type or Brahman cattle can produce tender meat.

The Brahman Society intends to further investigate these theories in an attempt to rectify possible misconceptions.

Factors influencing tenderness

In all these results, the standard operating procedures for cut removal was adhered to. Keep in mind that the bulls were tested and finished in different locations across Southern Africa, as well as slaughtered at different abattoirs where handling and procedures may differ slightly. These differences might have led to some of the phenotypic differences observed in the respective studies.

Heritability of meat tenderness is stated as being medium to high, so relatively quick genetic progress is possible. However, tenderness will depend on factors such as slaughter procedure, the addition of growth stimulants (which have a negative effect on tenderness), ageing and the like. Based on comments by Dr Strydom and Prof Hugo it is evident that the issue of meat quality and specifically tenderness is by no means straightforward. There are a number of actions (pre- and post-slaughter) that will influence results, as well as general factors such as age, nutrition, environment, etc. Only once we have eliminated these factors, will we truly benefit from the genetic merit of our animals.

Brahman Society goals and targets

The Brahman Societies are committed to seeing through the actions initiated by the BGP, namely the creation of a reference population for all Brahman traits, serving as a starting point for the production of genomic estimated breeding values (GEBVs). Meat quality is so important that, while it will take longer to accumulate enough samples to initiate the calculation of an EBV, it remains a priority.

(Compiled by Mecki Schneider, who was closely involved with studies on the Brahman breed over many years as chairman of the Southern African Brahman Breed Improvement Forum)

GÜNZEL SIMMENTALER

Genetics for the future

Tel: +264 67 240 272 • Cell: +264 81 129 0273

Kaspar & Stefanie Günzel

067 - 240 272 | 081 129 0273 | kaspar@iway.na

Grootfontein

Makalani Brahman

MANSO TYPE


TG 19-107


KG 19-58


KG 19-94


TG 19-82


KG 20-7


KG 19-30


TG 19-115


TG 19-30


KG 19-96


TG 19-68

Simmentaler and Brahman bulls will be on offer at the

Hochfeld Winter Auction

13 JUNE 2023

18:00, Agra-Bank Windhoek Ring, Windhoek

Bulls & females also available on the farm

‘Steaks’ high for Bos Indicus advantage for healthier beef

Sarah Flowers, Heather Hamblen and Dr Raluca Mateescu, Department of Animal Sciences, University of Florida

For years, Bos indicus-influenced cattle have received a bad rap for their less-marbled beef product. However, as the push for healthier foods has risen in recent years, this provides an opportunity for Bos indicus breeds to market a leaner product that is appealing to health-conscious consumers. Beyond the simple fact that beef from these cattle breeds is typically leaner, research at the University of Florida shows the fatty acid composition of the marbling is more favourable in terms of nutritional value.

The fatty acid composition of meat (muscle and adipose tissue) is important because it contributes to the nutritional value and it affects various aspects of meat quality, including shelf life and flavour. Nutritional value is determined primarily by the ratio between saturated fatty acids and poly-unsaturated fatty acids in meat. Low-fat diets have been recommended on the premise they would decrease the risk of developing several cardiovascular diseases and, therefore, improve human health.

As meat contains a relatively high amount of fat, some people followed the prevailing recommendation and cut down on their meat consumption. It turned out that this simple message is actually wrong. Detailed research carried out in the past decade shows that the total amount of fat in the diet, whether high or low, is not really linked with diseases. What really matters is the type of fat in the diet. What is becoming clearer is that bad fats, meaning trans- and some short-length saturated fats, increase the risk for coronary heart disease as well as other diseases, while good fats, meaning mono- and polyunsaturated and longer-length saturated fats, lower this risk.

> The “steaks” are high to produce healthier foods and Bos Indicus cattle may have the advantage!

Several factors in beef production affect fatty-acid composition, including breed and diet. Breed affects the fat content of meat and fat content itself is a factor determining fatty acid composition. If beef producers could identify cattle that have more beneficial fatty acid profiles, they could enhance the nutritional and health value of beef. Such beef could increase profit for producers because consumers likely would be willing to pay a premium for beef that consistently has a high nutritional and health value. In addition, this nutritionally enhanced beef would increase the overall demand for beef and ensure the continued growth of the beef industry.

Over the last few years, researchers have identified several genes that regulate the fatty acid composition of beef. This, along with the natural variation existing in many breeds of cattle, suggests that fatty acid profiles in beef could be improved through genetic selection. The University of Florida’s department of animal sciences is currently conducting research on Bos indicus-influenced cattle to determine the extent to which genetics influence fatty-acid composition and to develop genomic tools for the identification of genetically superior animals.

These findings could be great news for producers raising Brahman and Brahman-influenced cattle as preliminary data show they may have an advantage of a healthier fatty acid composition. In this dataset, nutrient profiles of beef were not uniform across cattle, and variation in fatty acid composition is partially attributable to genetic factors. Furthermore, part of this variation can be credited to Brahman percentage, allowing new opportunities for cattle producers utilising Bos indicus-influenced breeds.

This may open the door for producers utilising Bos indicus breeds to appeal towards finding genetic markers that will allow producers to identify and select for animals that will produce beef with higher percentages of polyunsaturated fatty acids and lower percentages of saturated fat-

Die ratte draai erg in Nikolai Metzger se kop soos hy elke bees fyn deurkyk.

Kandidaat-keurders moes oor die twee dae tien klasse van ses beeste in elke groep van nommer 1 tot 6 plaas en bespreek soos wat dit op skoue toegepas word. Alle strukturele foute moes uitgewys word. Die sweet het getap en koppe is gekrap, maar op die ou end het almal bevestig hulle kyk nou met heel ander oë na Brahmanbees. Een van die telers het opgemerk hy is spyt hy het nie eers hierdie kursus voltooi voordat hy met stoetteling begin het nie. Hy meen dit sou hom derduisende dollars bespaar het om baie beter keuses op veilings te kon maak.

ty acids. Now more than ever, beef producers are exploring new ways to market their products. Beef with an improved nutritional fatty acid profile creates a product marketable to consumers who place value on heath attributes over high marbling. Rather than Bos indicus-influenced cattle taking a hit for those cattle that don't reach the choice mark, producers should market this leaner product for its favourable attributes. Focusing research and promotion efforts towards nutritional and health benefits of beef could result in a very profitable future for Brahman-influenced cattle producers.

Deelnemers vol lof vir puik leerskool

Nagenoeg 12 kursusgangers het van 26 tot 27 April op die plaas van Jaco Liebenberg in die Outjo-omgewing saamgetrek om aan die gevorderde kursus vir Brahmane deel te neem.

Die Namibiese Brahman Telersgenootskap maak gebruik van 'n stelsel waar telers en beeskenners van ander rasse opgelei word om Brahmane jaarliks op 'n roterende basis te keur. Hierdie keurders/beoordelaars gaan deur 'n baie streng opleidingsproses en dit neem soms agt tot tien jaar voordat so 'n persoon die vlak van senior beoordelaar vir die Brahmanras bereik.

Vir die Brahmane word 'n keurkaart gebruik waarvolgens 15 eienskappe beoordeel word en 'n punt van 1 tot 9 vir elke eienskap gegee word. Dit word algemeen as een van die beste keuringsprosesse beskou en het gehelp om die Brahmanras se probleemeienskappe oor die jare heen grootliks uit te skakel en die ras te vestig as die gewildste in die land.

Telers kyk aandagtig hoe Awie Steenkamp vinnig en behendig 'n groot bul se klouprobleem regstel.

Klougesondheid hoog op telersdag se agenda

Nagenoeg 25 telers het die jaarlikse Brahman-telersdag op 7 Februarie op die plaas Bornholm van Kaspar en Stephanie Günzel naby Grootfontein bygewoon. Die reënseisoen het vanjaar hier 'n goeie wegspring gehad wat amper die telersdag in gedrang gebring het. Die krale was deurdrenk van water nadat bykans 400 mm in die voorafgaande weke uitgesak het. Kortom, dit was een groot modderbad, maar soos die spreekwoord lui maak 'n boer 'n plan!

Omdat loopvermoë een van die Brahmanras se beste eienskappe is, was Awie Steenkamp van Awie's Hoofcare die genooide spreker. Hy het telers ingelig oor die faktore wat die toestand van kloue beïnvloed en riglyne vir klou-beoordeling en -gesondheid bespreek.

Ná die teoretiese voordrag het Awie telers na sy masjien, wat oorspronklik uit Amerika ingevoer is, vergesel vir praktiese demonstrasies oor hoe om kloue vroegtydig te behandel. Op dié manier kan 'n stoetboer voorkom dat hy van sy beste stoetdiere verloor weens beserings of klouprobleme.

Groot fokus is geplaas op diere met strukturele foute en genetiese defekte; dit is nie behandelbaar nie en sulke diere moet uitgeskot word. Awie het benadruk dat Namibië 'n land van uiterstes is wat klimaat en landskap betref en dit 'n groot invloed op kloue van diere het, veral in sanderige dele. Sand droog die kloue erg uit en probleme kan dan ontstaan.

In die geval van stoetboere is dit van kardinale belang dat 'n hoefspesialis vroegtydig ingekry moet word sodra 'n besering opgedoen word. In baie gevalle word Awie eers gekontak as die dier reeds gaan lê het. Inflammasie het dan al so ver gevorder dat die dier dikwels uit pyn verlos moet word. Hy het genoem in omtrent alle gevalle waar boere hom betyds gekontak het, kon hy diere se kloue suksesvol behandel vir volkome herstel.

Die gerespekteerde Amerikaanse beeskenner PJ Budler wat wêreldwyd skoue beoordeel en verlede jaar verantwoordelik was vir Brahman-beoordeling op die Windhoek-skou het bevestig die grootste probleem by beeste die wêreld oor is tans klouprobleme; daarom die dringendheid dat telers en keurders moet fokus op die korrektheid en goeie gesondheid van kloue.

Ná die amptelike verrigtinge in die saal en kraal het Kaspar die boere op 'n besigtigingsrit na sy Brahman-kuddes en mielie- en grondboontjielande geneem. Telers was duidelik beïndruk met die mooi Brahman-koeie en -kalwers wat hulle gesien het. Tyd vir ontspan en die bespreking van nuutgevonde kennis het toe om 'n feestelike braaivleisvuur aangebreek.

Telers sit koppe bymekaar vir strategiese beplanning

Brahman-telers het op 15 Februarie 2023 koppe bymekaar gesit vir 'n strategiese beplanningsessie waartydens vier kritiek belangrike faktore vir sukses geïdentifiseer is.

Die sessie, met Roelie Venter as fasiliteerder, het afgeskop met 'n SWOT-analise (strengths, weaknesses, opportunities and threats) om sterk punte, geleenthede, swak punte en bedreigings uit te wys.

Die visie is om die Namibiese Brahman die ras van keuse in Suider-Afrika te maak en die beesbedryf winsgewender te maak.

Om dit te bereik is die volgende punte uitgelig:

- Telers moet gemotiveer en ingelig word om die strategiese plan te aanvaar. Telersdae moet gehou word vir jong en nuwe telers. Daarby moet 'n jeugprogram ontwikkel word om die waarde van die Brahman-ras te beklemtoon.
- Tegnologie moet ingespan word om winsgewendheid te verhoog. Dit kan bereik word deur deelname aan prestasietoetsing aan te moedig en voort te gaan met genotipering. Net so belangrik is die ontleding van genetiese tendense. Voorts moet telers opgelei word oor hoe om tegnologie te gebruik en dit te verstaan.
- Aggressiewe bemarking moet geloods word op die Brahman Telersgenootskap se webtuiste en Facebook-blad deur dié platforms aktief en lewendig te hou. Ten einde die Brahman op grondvlak te bevorder moet suksesverhale gedeel word van produsente wat met Brahmane boer, bv. hoe die Brahman winsgewendheid per hektaar verhoog.
- Die teel van fenotipies aanpasbare diere deur streng seleksie tydens keuring en in kuddes van prestasie-getoetste diere wat ooreenstem met die ras se doelwitte. Vrugbaarheid en 'n lae onderhoudsbehoefte moet voorrang in seleksie geniet.

Die raad het verantwoordelikheid aanvaar om die strategiese plan te implementeer ten einde die Brahman na die volgende vlak te neem. Daarvoor sal aksiestappe oor die volgende vyf jaar geneem word.

Mecki vereer vir lewenslange bydrae

Mecki Schneider ontvang 'n toekenning van Henry Mans, voorsitter van die Brahman Telersgenootskap, vir sy lewenslange bydrae tot dié ras en sy telers, maar ook die groter boerderygemeenskap van die land. "Dit is alom bekend dat die Namibiese Brahman-bedryf wêreldwyd aan die voorpunt staan van tegnologiese vordering en genomika en daarvoor erkenning geniet. Die dryfveer agter hierdie sukses is grootliks te danke aan die fenomenale visie van Mecki en sy kennis oor boerdery en stoetteling wat hy tafel toe gebring het," het Henry tydens die Brahman-telersdag gesê. Gepas is die toekenning in die vorm van 'n potloodskets van 'n Brahmanbul – die kunswerk van die bekende Boerbok-teler Maretha Coetzee van die Stampriet-Gochas omgewing.

Oriënteringsdag op Nimmerrus verras

Pieter Gouws, Brahman-teler, Nimmerrus

'n Week voor die amptelike datum moes die Brahman-raad besluit of die jaarlikse oriënteringsdag afgestel moet word weens weinig belangstelling. Daar is toe wel voortgegaan met reëlings en goeie bywoning het op die ou end verras.

Telers en enkele kommunale boere het op 6 April uit alle windrigtings opgedaag vir dié geleentheid op die plaas Nimmerrus in die Outjo-omgewing. Die aanbieder was Thunis Cocklin wat hom baie goed van sy taak gekwyt het – boonop in Engels ter wille van al die gaste.

Sessie 1: Daar is begin by die begin – die Brahman-ras se geskiedenis, oorsprong en hoe dié ras in Namibië beland het. Aandag is ook gegee aan die vier hoofbloedlyne of te wel tipes.

Sessie 2: Ons het gekyk na die ideale bul en koei wat aangepas is by Namibiese toestande, die Brahman se sterk en minder sterk eienskappe, waarna telers en keurders moet oplet en die benaming van al die liggaamsdele van die diere.

Sessie 3: Tyd vir kraal toe gaan, het aangebreek waar Thunis 'n bespreking van 'n koei en 'n bul gelei het. Foute van die diere is ook uitgewys sodat almal kon leer waarna om te kyk. 'n Goeie praktiese oefening het gevolg toe bywoners die geleentheid kry om 'n dier in die kraal te bespreek.

Dit was duidelik dat die oriënteringsdag 'n belangrike geleentheid op die Brahman-kalender moet bly. Voornemende telers behoort die omvattende blootstelling aan dié ras te oorweeg voordat hulle met stoetteling begin.

Belangstellendes het uit alle windrigtings opgedaag vir die jaarlikse Brahman-oriënteringdag. Die aanbieder was Thunis Cocklin (middel).

Die gasvrye Gouws-familie wat vir alles reggestaan het – akkommodasie, genoeg te ete en te drinke en die beskikbaarstelling van hul diere vir bespreking. Pieter en Marnarie is hier by hul kinders Eldené en klein Pieter wat die blyk van waardering van die Brahman-raad vashou.

Crossbreeding has its economic advantages

Heather Smith Thomas

The more unrelated the parents, the more "kick" you get from hybrid vigour. Zebu (Bos indicus) cattle such as the Brahman are the least closely related to most other domestic breeds; crossing them results in the most hybrid vigour (heterosis). Also, European cattle brought to North America during the 1960s were unrelated to the British breeds already, resulting in many benefits gained by crossing them. The same applies for different breeds brought to Southern Africa during the past century.

A crossbred animal has several advantages over a purebred, especially in traits important to commercial farmers: increased fertility, longevity, feed efficiency and disease resistance – due to the phenomenon of hybrid vigour. It also generally provides an increase in growth and carcass yield over what the parents produce.

Composites (a stabilised mix of two or more breeds) already have their kick from crossing and pass along a lower percentage of hybrid vigour to their offspring. They are not as unrelated as crossing an animal of one breed with an animal of a different breed. With composite cattle, you get desirable traits from two or more breeds but you don't get as much hybrid vigour when you breed animals within that composite group. If you want to maximise hybrid vigour, you need a complete outcross.

Darrh Bullock, a University of Kentucky extension professor specialising in beef cattle genetics, says there are many genetic tools available but the two most important are crossbreeding and selection. "In terms of crossbreeding, heterosis is something we all know about but not enough folks are utilising it." In recent decades most commercial herds have lost the hybrid vigour they once had.

Better performance

"The beauty of crossbreeding is that the offspring perform better than the average of the parent breeds, but not necessarily above the best trait of each breed. The reason why crossbreeding is beneficial is that we are dealing with multiple traits. If we are only looking at a single trait, a straight bred might be better."

This is evidenced in the milking ability of the dairy cow or the marbling of the Wagyu. A breed that has been selected for maximising a single trait can usually be the best in that one trait.

"But in the beef industry, there are many traits to focus on such as dealing with the environment, where heterosis gives us a benefit. The cumulative effect one gets with heterosis is always beneficial. There is also breed complementarity. We can look at how well certain breeds fit the environment, our management, and each other. We used to talk about complementarity just from the standpoint of maternal and paternal breeds," said Bullock.

Genetic trends in the beef industry have changed over the years.

"Back in the 1970s, there was more spread for most traits than today. Now we are putting them all together. The cattle that had lots of milk back then are no longer producing as much, and the ones that had just a little milk back then have increased in milk production. Growth has also changed. Back in the 1960s Angus cattle were one of the smallest beef animals and are now one of the largest in terms of yearling and mature weight. We have different breed philosophies. That's fine, but breeds today no longer fall as neatly into those maternal/paternal breed classifications as they used to," he said.

Environment important

"If you are in an environment that can provide for lots of milk, growth and production, choose breeds that fit that scenario. If you are in a more limited, harsh environment, think about that. This is why we should focus on crossbreeding and heterosis."

These two traits have the biggest im-

47

Customers take centre stage at Brahman conference

The need for measurement and benchmarking to ensure progress on a variety of increasingly important traits was strongly emphasised at the Australian Brahman Breeders Association annual conference at the beginning of May. Several customers of Brahman cattle from commercial breeding, stud genetics and feedlots to live export and meat processing were invited to offer an honest assessment of where they see the current strengths and shortcomings of Brahman cattle.

"There are some people that measure a lot, some that measure a little, and some that don't measure at all. We've got to step that up to everyone measuring at least a little. The whole context of measuring shouldn't be to define the elite, it should be to remove the bottom 30% to get a bigger production advantage," vice president Matthew Noakes observed.

Leading red meat scientist Dr Alex Ball was characteristically direct in his comments, advising that the beat of the consumer drum is bringing drastic changes to the beef industry, and placing greater emphasis on selection for traits based on eating quality, welfare and sustainability.

Technology means the industry was under more consumer and community scrutiny than ever before, and the power of information transfer through the value chain also meant that there was now "no place you can hide in the value chain".

"If you have got animals that don't meet the aspirations of the modern market or the future market, the information system will soon find you out, and that is going to be quite important for all breeders in the audience. If you're not meeting the aspirations of quality, sustainability and welfare, as a bull breeder, then you need to have a really good look at your bull breeding programme."

He produced a range of data to highlight the variation that exists in Brahman cattle (as in all breeds) between the top 10% of genetics and bottom 10% of genetics. In Brahmans these variances spanned more than 5 kg of birthweight, over 19 kg of 200-day weight, over 53 kg of mature cow weight, nearly 22 days to calving, and 20 kg of carcass weight (worth over N$1 240 per head on current markets), with variations in many other important traits such as eye muscle, rib fat and marbling.

"So for all of those traits, you can make a change," he said. "It is not as though Brahman doesn't have the opportunity to change the focus of its breeding programme very quickly, it can because you have got that variation there."

Among more specific traits he discussed was the challenge of selecting for growth without increasing mature cow weight.

Growth was still king, he said. In northern Australian breeding systems turning off 300 to 400 kg steers for feedlots he said an animal growing at 0,8 kg per day would take 125 days and 44 000 kg of feed for maintenance, while an animal growing at 1,2 kg per day would take just 84 days and 14 000 kg less feed intake.

"Why is that important? Because the world beef industry is looking at sustainability and efficiency as the metrics of performance of the future.

"So if you have an animal that is 34% growth to maintenance, versus an animal at 23% growth to maintenance, you have got a very, very successful animal in the marketplace, so that is why growth will remain king.

"But it comes at a cost, and this is the big fallacy that is emerging at the moment, that we are just simply moving mature cow weight up as we select for growth. So, the key thing is you can select for growth, but you don't have to change mature cow weight."

On the question of yield versus eating quality, he emphasised the trade-off between yield and eating quality, and produced data showing there is nearly three times as much variation in value from quality as there is for yield, even in a northern production system.

He said the latest global benchmarking data from the USDA was highlighting some challenges for the Brahman industry, which is now sitting at the higher end of birthweight for most major breeds across the world, and the lowest marble score.

"The challenge for the Brahman industry is to increase growth, maintain mature cow size,

change birthweight and improve marbling, and they are the critical levers one can drive. If you don't have marbling then accept that you produce manufacturing beef.

His plea for Brahman breeders was to measure cattle either directly or through genomics with other breeds to stay competitive. He also urged Brahman breeders to know where they rank with eating quality, suggesting they should be aiming to meet the index at 56 or above of Meat Standards Australia (MSA).

Producing an 'athlete'

Peter Quinn, a commercial crossbreeder, offered his perspective. He uses about 80 bulls a year in a commercial breeding operation involving more than 2 500 cows, saying a Brahman seedstock producer is actually producing "an athlete" that has to live for seven plus years, walk 10 000 to 12 000 km, serve hundreds of cows, swim gullies, survive fights and hopefully not get struck by lightning.

"That is the sort of beast we want. So those who can't breed that athlete should be put in a square box, not put in a ring to sell." From a crossbreeding background, he said he needed genetics from the Brahman. "Whether it is 20%, 40%, or 60% or 80%, doesn't really matter."

After years of using a two-breed criss-cross program with Brahman and Charolais genetics, about eight years ago he introduced a third breed, Shorthorn to increase intramuscular fat, which had increased average MSA index scores from about 56 to 57 and 60.

In terms of the balance between producing a live calf, low birthweights, eating quality and yield, he said he felt it was his job to balance that up in a commercial world. "It is our responsibility as seedstock or commercial producer to get right the liveability, low birthweight, and not too many dumb calves (calves that will not suckle from their mothers)." (www.beefcentral.com)

Crossbreeding has its economic advantages

45

pact on your operation – reproduction and longevity. Improving herd reproduction and keeping cows longer in the herd provides a huge financial benefit for most commercial operations. Health is another important factor that improves with crossbreeding.

"The end product – carcass weights, marbling, etc. – is where we see the least impact. It doesn't hurt those traits to crossbreed; we just don't see a big increase."

He gives some economic examples to show why crossbreeding is beneficial. One example is a 100-cow herd in which weaned calf per cow exposed to a bull is 85%. "Let's say weaning weights average 238 kg and price average N$33 per kg. In this scenario the economic impact of heterosis can be substantial, improving the number of calves weaned and/or the weaning weight of the calves."

In a two-breed composite, you maintain about 50% of maximum heterosis. In such a case, your additional return on an annual basis is around N$126 000 on the 100-head herd. Another scenario that's similar is the most simple rotational breeding system – a two-breed rotation. You select two breeds and rotate between them (with a change of the breed of bulls) every four years. If you go four years with Brahman, four years Simmentaler, four years Brahman, etc. it's about the same level of heterosis. This simple rotation has a fairly significant return.

A more sophisticated two-breed rotation can be accomplished with a criss-cross system. This can add another N$36 000 per annum in return. You still have two breeds, but whatever the sire breed of the female is, you breed that female to the opposite breed. If she was sired by a Simmentaler you would breed her to a Brahman and vice versa.

"A four-breed composite is probably where you get the most benefit for a sustainable system, adding about N$198 000 to the herd's annual income. There is also a roto-terminal cross, which many folks feel is more efficient (two breeds in the rotation, with a third breed as a terminal cross), but because of the heterosis that you miss on the female side, it's not quite as good. The females only have about 2/3 retained heterosis on a rotational cross. The majority of the calves have full heterosis (being a 3-breed cross) but the maternal heterosis is where we get the biggest bang for our buck (an F1 cow that's half and half – two breeds) because she has the most increase in fertility and longevity." (www.farmprogress.com)