In 1962 I started breeding beef cattle using Sussex and Afrikander cows and Hereford bulls. Theoretically all progeny with white faces were to be sold and no replacement females would be kept from this “three-way cross”. This system of ranching proved to be much too complicated in practice, than it appeared in theory. If good quality Sussex and Afrikander cows had been available, practical complications would have been minimal, but who sells good quality cows? We all keep those and sell off the average and below average ones!

The alternative is to make your own, which means a herd of good quality Afrikander cows mated with Afrikander bulls, a second herd of Afrikander cows with Sussex bulls to produce hybrid cows, these cows are then mated with Hereford bulls for the terminal cross. Very good oxen are produced by this cross but it is a long haul before the final product is reached. The main problem is the number of camps needed to operate a three-way cross, and so I did away with the Afrikander herd which had slow growth and lacked the fertility of the hybrid Afrikander — Sussex cow. Without the Afrikander bulls the herd turned more and more exotic, the 3/4 Sussex 1/4 Afrikander cows turned out well, but I started to loose size.

A Brahman bull was introduced and very good growthy cattle resulted. I was not happy with the temperament of his progeny, fences were being broken and they were difficult to control, sometimes impossible, and so I decided to sell him. At this stage I had lost all direction in my crossbreeding program; where was I going?

I had been performance-testing for some years and had made little progress, the herd was too exotic and cow size had decreased instead of increasing. I was concerned at this trend and I was looking at other breeds.

Roly Taylor then introduced me to Santa Gertrudis, which appeared to have the qualities of the ideal beef animal. My breeding system would be simplified since only one breed would be involved; size would not be a problem as Santas are big and beefy; temperament would be a great improvement on the Brahman crosses; and so I took the plunge in 1973 and imported 26 Santa cows and five bulls.

These cattle came from King Ranch, Briggs Ranches, Chaparrosa and Nine Bar.

Cull heifers at weaning time.

Select replacement heifers before they are bred. Vulva must be sprung. Take heifers to established good pastures. Slaughter if they do not breed. Palpate if they do not breed from third calf. Nutrition is very important. In this herd only 5% heifers were bred when tested. Nothing wrong could be found. We had Angus bulls- 10 heifers to one bull.

We are now blood testing older cows to see what they need.

Heifers that change environment and go to a different climate cannot breed in 90 days. Give her one year. Put her on rough grass and her stomach takes a year to stretch.

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Santa Gertrudis

the Stockman’s tool for more beef

>>> JOHN FYVIE, 1983

In 1962 I started breeding beef cattle using Sussex and Afrikander cows and Hereford bulls. Theoretically all progeny with white faces were to be sold and no replacement females would be kept from this “three-way cross”. This system of ranching proved to be much too complicated in practice, than it appeared in theory. If good quality Sussex and Afrikander cows had been available, practical complications would have been minimal, but who sells good quality cows? We all keep those and sell off the average and below average ones!

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These cattle came from King Ranch, Briggs Ranches, Chaparrosa and Nine Bar.

Vibriosis

Inject for Vibriosis 3 weeks before breeding season. Keep six acres to a heifer in good rainfall areas. Give liquid feed and mineral log in dry climate.

Breed Santa Gertrudis heifers at the age of 12 to 14 months
Hezekiah
Veld Santas

JUAN - 084.549.4432 • MARIUS - 083.508.5376
JUAN.FREEMAN1@GMAIL.COM
WWW.HEZEKIAHVELDSANTAS.CO.ZA
Breeding 15 month old heifers to calve down as two year olds has always been one of my goals; I tried this in 1968 and 1969 on Sussex heifers with disastrous results. Santa breeders told me that this practice was the norm amongst Santa stud breeders and so I decided to try again. With a little extra supplementation in winter (which the Sussex also had) this practice has been successful with Santa heifers. I would, however, be guarded against mating before 18 months on a veld only ranch.

Amongst my 1975 heifers were 45 Santa females, 30 of which had a mass of 320 kg at 15 months of age; the best Sussex had a mass of 290 kg under the same nutritional conditions. These cattle had identical treatment, and so the extra mass of the Santas was attributable to genetic superiority. The thirty Santa heifers were mated at 15 months and 28 took the bull. Subsequent conception rates of these cattle born in 1975 are shown in the following table:

<table>
<thead>
<tr>
<th>Year</th>
<th>In Calf</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>93 %</td>
</tr>
<tr>
<td>1978</td>
<td>80 %</td>
</tr>
<tr>
<td>1979</td>
<td>78 %</td>
</tr>
<tr>
<td>1980</td>
<td>85 %</td>
</tr>
<tr>
<td>1981</td>
<td>79 %</td>
</tr>
<tr>
<td>1982</td>
<td>79 %</td>
</tr>
</tbody>
</table>

It is clear that the Santa female has the genetic potential to calve young and to continue to calve regularly. Further evidence of the Santa’s superior mothering ability and potential to produce heavier calves, (which means more cash at the bank) is illustrated in the average 205 day mass as recorded on my farm at Bergville, Natal.

Seven year average when using exotic bulls (before introducing Santa bulls):

<table>
<thead>
<tr>
<th>Weaning weight</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>203 kg</td>
<td>185 kg</td>
</tr>
</tbody>
</table>

Seven year average when using Santa bulls on the same cows and lately F 1 cows:

<table>
<thead>
<tr>
<th>Weaning weight</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>221 kg</td>
<td>208 kg</td>
</tr>
</tbody>
</table>

Seven year average of purebred Santa cows and bulls:

<table>
<thead>
<tr>
<th>Weaning weight</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>228 kg</td>
<td>209 kg</td>
</tr>
</tbody>
</table>

I don’t believe in creep feeding which means that the improvement is genetic. Santas have consistently given an extra 20 - 25 kg per calf, at weaning; which would be an extra R4 000 - R5 000 for every 200 calves born.

Using only Santa bulls simplifies herd management and eliminates much of the concern of having the correct bull in the correct herd for crossbreeding. With inputs and interest rates as high at present, no stock farmer can afford to have cattle that are not top producers. Santa Gertrudis have made the difference on my farm and they will do the same on yours as well.
Santa Gertrudis cattle also thrive in the coldest parts of the world

>> GEOFF BOTHA, 1983

My view, and I believe that was the general opinion, was that Santa Gertrudis cattle performed best in the warmer parts of the world. After all, the breed originated in the hot, dry part of Texas. It is also known that the specific target of the breeders was to develop a breed that could withstand the difficult grazing conditions of the hot, dry, insect infested part of Texas.

It is a known fact that Santas were kept in the colder parts of the USA, but as the numbers in those parts are somewhat restricted, I doubted the adaptability of the Santa Gertrudis in extremely cold regions.

However, since I read an article about the acquisition of Santas by Soviet Russia during 1978, I am convinced that the Santa Gertrudis perform better in very cold conditions than the European breeds. My current belief is based on my conviction that the Russian government thoroughly tested and assessed Santa Gertrudis before importing them on a large scale from Texas.

Santa Gertrudis’ adaptability is one of the main reasons why no Santas died during last year’s cold when large numbers of cattle, and especially Zebu cattle, died in South Africa.

Santa Gertrudis embryo’s
FROM TEXAS TO SOUTH AFRICA
Genetic resources San Marcos

>> YIANNAKIS BROS FARMS, SANTA HILL, A BALOCCO, 1984

Messrs Paul Yiannakis and Trevor Stretton undertook a trip to Texas in May 1984. They were impressed with the quality of Embryo Calves on the Ranches and the Donor Cows standing at the various Collection Centres.

After long negotiations a contract was finally drawn up with Genetic Resources to implant 100 Grade 1 Embryos in recipients in South Africa,

Messrs Dan Wendt and Bill Barrett undertook to do the parent matching and Dr J.D. Norris would fly out with the embryos and implant them.

September saw feverish activity both at Genetic Resources where the Donor Cows were assembled and synchronised and meticulously observed for heat by Frans de Beer and his herd boys.

The first batch of embryo’s arrived in the fallopian tubes of rabbits. Dr Norris brought Dr John Hodges to assist and Prof Herman Venter (Chief Advisor) and his colleagues Drs Danie Steyn and Koos van Zyl were also present to assist on a long history-making Friday night.

The result was a 40% pregnancy in the recipient cows.

December saw the whole exercise repeating itself, but this time Dr’s Norris and Hodges brought the embryos in a chemical medium and were well pleased with the way they travelled – a 40% conception is again expected, this will make the undertaking both genetically and economically viable.
BOMVU SANTAS
since 1974

When the going gets tough the tough keep going.

Let Nature be your guide!
(6mm Rain in 6 months)

Alan Kietzmann
082 820 6429
Our modern concept of cattle breeding has been greatly influenced by two people viz. Prof. Jan Bonsma of South Africa, who developed the Bonsmara and Tom Lasater of America, who developed the Beefmaster breed.

Tom Lasater has a very practical approach to breeding. A few statements which contributed to his success are, and I quote:

“OUR MINDS, LIKE PARACHUTES, ONLY FUNCTION WHEN OPEN”

“I THINK NATURE IS SMART AS HELL. I HELP AS MUCH AS I CAN, BUT I TRY TO LET HER DO MOST OF THE WORK”.

He consequently gives nature the chance to point out the defects without interfering with medicine or feeding. He gets rid of any mal adjusted animal. He ranches only with animals that can reproduce and maintain themselves under natural environments. Lasater is very practical and seldom interferes with nature in her selection process. He feels thus about a bull’s head:

“THE ONLY THING A BULL NEEDS A HEAD FOR IS TO TAKE IN GROCERIES AND EMIT A MATING CALL”.

On cows he comments:

“A COW LIKE A TRACTOR, MUST WORK MOST OF THE TIME”.

This is clearly reflected in his selection program for fertility, hardiness and adaptability. He follows this philosophy blindly in his cow herd.

His heifers are bred to the bull at 12½ — 14½ months so that they can calve at 25 months. All breeding takes place under extensive veld conditions for 65 days.

He, annually, slaughters without exception:

- All open heifers and cows.
- All females whose calf has died, no matter what the reason. They are even slaughtered if a wild animal caught the calf, because she was a bad mother.
- He culls all bull and heifer calves with a low weaning index; including their mothers.
- All cows with a weak constitution, regardless of the cause, are culled.

By these means he succeeded in building a very fertile and hardy herd which reproduces under natural veld conditions. Mother nature did the selection.

As Lasater puts it: “IN CULLING EVERY FEMALE THAT FAILS TO WEAN A HEAVY CALF EVERY YEAR, REGARDLESS OF REASON, WE loose SOME GOOD ONES, BUT WE GET ALL THE LEMONS”.

Hardiness and adaptability are the foundation of success for survival in nature.

“HARDINESS IS EXEMPLIFIED BY THOSE INDIVIDUALS WHICH CARRY ON THEIR RELENTLESS PRODUCTION ASSIGNMENT YEAR AFTER YEAR WITH MINIMUM ASSISTANCE. UNFORTUNATELY VERY LITTLE ATTENTION HAS BEEN GIVEN TO SELECTION FOR HARDINESS BY BREEDERS. MORE EMPHASIS HAS BEEN PLACED ON MEDICATION THAN ON BREEDING TROUBLE FREE CATTLE”.

Lasater feels very strongly about this, hence his statement: WHEN A BULL OR A COW NEEDS A FOOT TRIM, WE LET THE PACKER TRIM THEM”.

He firmly believes that nature determines which type of cattle in a breed performs the best. One of Lasater’s biggest basic concepts is:

“FORM ALWAYS FOLLOWS FUNCTION”.

Lasater’s magnificently practical approach to breeding and selection, where nature is the selector, was very
meaningful to us. So much so, that we decided to implement it in our own herd.

To start with we divided our herd into two groups:

>> **Group A**: This group was ransacked with conventionally. In other words, everything that was wrong was remedied either by feeding, medicine or surgery.

>> **Group B**: This herd was left to nature to do the selection.

All the animals in this group are run extensively on harsh veld grazing and a phosphate lick. They receive no additional feed what so ever. At times this herd had to walk 4 km and back to the nearest water, in our very hot summer conditions, and then still do enough footwork to graze to their full.

The calves from this herd are weaned from the veld. The bull calves are then sent to the mountain ranch after weaning; where conditions are hard and the surface rocky which places high demand on legs, joints, hooves and constitution. In short, “Survival of the fittest is practised here.

Very soon Mother Nature pointed out:

>> **Cows**:
- Which cows were unable to walk.
- Which cows did not have the necessary constitution and fell short.
- Who calved regularly under extensive veld conditions.
- Which cows did not raise their calves properly.

>> **Bulls**: In the bull herd the results were remarkable.

- Very soon the weaker ones fell behind.
- The flabby soft type bulls with large sheathes, developed prolapsed prepuces with consequent injuries.
- The bulls with weak legs or the tendency to weak limbs and joints were soon lame and fell behind.
- The bulls with hoof problems; low heels and open toes, injured easily and contracted infections and were soon lame.
- The bull that did not have the necessary constitution became thin and fell short.

It was interesting to note which type was favourably selected by nature because:

**“FORM FOLLOWS FUNCTION”:**

- Nature did away with the flat flabby type of bull particularly those with prominent hips.
- A more rounded, lengthy muscled bull with a strong straight back emerged.
- Nature did away with heavy and fleshy sheaths. Dryer shorter sheathes emerged and both bulls and cows showed less dewlaps. In the heifers less navel flaps showed.
- Fleshy legs and hocks disappeared. In brief all excess skin disappeared.
- Mother Nature had immediately got rid of all cattle with swollen hocks, open hooves and defective joints.
- Nature showed clearly that any amount of pain in the back or hind legs caused the bull to walk less and to serve less cows because it was too painful. When he walked less he grazed less and consequently lost weight and dropped out presenting a sorry sight.

It again proves: **“FORM FOLLOWS FUNCTION”.**

We consequently realized that Nature had done us a great favour in pointing out the problems and the families with those tendencies. We quickly realized that:

**ANY ANIMAL THAT COULD NOT MAINTAIN ITSELF, AND PRODUCE UNDER NATURAL VELD CONDITIONS WAS NOT WORTHY OF THE SUN THAT SHINES ON IT.**

Consequently we, annually, cull all animals if they cannot walk, reproduce and still flourish under natural veld conditions. In this way only the best and hardest of animals are kept to breed and ranch with.

Up to the age of 30 months all bulls are tested under extensive veld conditions. It is then necessary to determine how they will fare under intensive conditions where they are performance tested.

Once again when their results are available after testing them under intensive conditions and high feed intake, the weakest ones are culled.
VERBROS

VB1305 POLLED BULL SOLD TO DAIL VAN RENSBURG

A chip of the old block

PZ 0812

John Schmidt | 082 323 2126 | www.noordsanta.co.za
It is only at this stage that the breeder and the bull buyer has a complete picture of the bull’s adaptability, hardiness and performance under both extensive and intensive conditions.

On shows and one-sided feeding practises Tom Lasater says as follows:

“SHOWING AND SELLING CATTLE UNDER ARTIFICIAL CONDITIONS, IS ONE OF THE GREAT HANDICAPS TO GENETIC IMPROVEMENT IN OUR CATTLE TODAY”.

If the correct objectives are not pursued at shows, we are doing more harm than good. Especially as far as forming the breeding policies of our young breeders, it has happened far too often that bulls with defective hind legs have become breed champions. At the show ring the bull has already had difficulty in walking. Back on the ranch this bull has difficulty in maintaining himself under natural pasture conditions. After some time the owner is compelled to bring the bull back to the pens for additional feed and care. Some of these bulls even have difficulty after a while to maintain themselves under intensive conditions. These bulls are inclined to lie down more than stand, because their hind legs are painful; and the owner gives every excuse in the book.

Because the bull had the distinction of being champion he is still used abundantly in an A.I. program … passing on his defects to his progeny. In the first instance he should have gone to the butcher and not to the show ring. Bear in mind that inferior bulls produce feeble calves and feeble keeper heifers; which in turn gives the breed a bad name.

Lasater maintains: “CATTLE RAISED IN HARD COUNTRY, WILL ADAPT EASILY TO STOCK FARM CONDITIONS, BUT NOT ALWAYS VICE VERSA”.

This is a very constructive statement. Any young bull that has proved himself under harsh extensive veld conditions, more often than not, does even better under intensive conditions. On the contrary it is NO GUARANTEE that a bull that has done well under intensive conditions will perform and maintain himself under extensive conditions. Many bulls fail hopelessly when subjected to harsh extensive conditions.

It is evident that in our present economic and agricultural climate, every breed should base their selection and show judgement on:

(a) Production
(b) Functional efficiency.

If these are ignored the breed will soon be on its way out.

A final bit of wisdom from Tom Lasater:

“CATTLE BREEDING IS A RELATIVELY SIMPLE ENDEAVOUR. THE ONLY DIFFICULT PART IS TO KEEP IT SIMPLE”.
In 1990, no bulls were rejected because of insufficient spring of rib, and 15% of the rejected bulls were rejected due to their sheaths. No bull was rejected because of a fine bone structure.

Ten years later, 24% of the rejected bulls were rejected because of sheaths, 16% because they were flat (too little spring of rib) and 7% were rejected for a fine bone structure. What we take from this is that when sheaths become shorter, the bone structure of the bulls became finer. Sheaths should not be bred out completely, as the first object of a stud is to breed animals that perform well on natural grazing and in the feedlot, therefore there is no room for flat-ribbed animals.

In 2004, 21% of the rejected bulls were turned down because of sheaths and 18% because of poor spring of rib.

**SUNDAY 15th APRIL:** All delegates arrive at Jan Smuts Airport, Johannesburg (now Oliver Tambo Airport) where met by Martin Seyfferdt – Breed Director of Santa Gertrudis SA.

**MONDAY 16th APRIL:** Early rise and off to the Rand Show grounds for the Australian and Texas owners to see their bulls for the first time in 6 months. All owners were pleasantly surprised to see the outstanding condition of the bulls prepared by Rosie Ross (from Australia). The bulls from Australia were 17 days at sea from Fremantle to Durban. The Texas bulls spend only a few days on the flight to Jan Smuts airport. The bulls stayed on the farm of Mr Armando Balocco prior to the championships. At 2 p.m. Dr David Griesel gave his address of welcome which set the scene for 9 fun filled days ahead. Dr Jakob de Villiers, Minister of Agriculture started - Cattle Breeders Told – Adopt high tech methods or disappear. He warned: The age of high technology in animal industry has arrived and those producers who do not accept this will surely disappear from the scene. The great leaps animal scientists were making to develop the new high technology in the case of biotechnology and genetic engineering. Many of the techniques such as recombinant DNA, mutaenesis, immunoassays, chimeric embryos, sexing of embryos and sperms and the micro-injection of sperms into ova were not yet implemented in large scale farm practices. Artificial insemination also started in the laboratory before it developed into the world-wide multi-million dollar industry it currently was.
Santa, vir mèèr vleis.

Raymund en Irma de Villiers
082 946 2343 • raymund@lantic.co.za

JOUBERTSRUST
Posbus 90 • Sannieshof • 2760

SANTARAY
SANTA GERTRUDIS
SAAM
BOER ONS VIR
DIE TOEKOMS

So veelsydig en aanpasbaar as wat jou boerdery vereis.
Voergewasse waarop jy kan staataak. Ons veelsydige weidingspakket lever voer met ’n hoë-drakrag en smaaklikheid en is geskik vir melk-, vleisbees- of skaapproduksie.

www.pannar.com | infoserve@pannar.co.za

<table>
<thead>
<tr>
<th>Luxem</th>
<th>Intensiewe Grasse</th>
<th>Droëland Wintergewasse</th>
<th>Eerjarige Subtropiese Gewasse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dormaneklasse 7 en 9, weiding en hooitipes</td>
<td>Eenjarige Raai gras, Meerjarige Raai gras</td>
<td>Haver, Kerog, Stoelrug, Japanneesse Radys</td>
<td>Voorsorghuns, Tef</td>
</tr>
</tbody>
</table>

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Other reproductive techniques such as super ovulation, non-surgical embryo transfers, the freezing of embryos, the splitting of embryos to produce multiple offspring which, although expensive, were already available to producers. He also said that Anabolic Steroids were playing an important part in increasing the production of beef. The use of beta antagonists, growth hormones, immunological castration and immunization against adipocytes were exciting future technologies.

The Keynote address on World trends and future markets for beef was delivered by Dr Gregory Sullivan, President Advanced Marketing Systems, USA.

Dr BDH van Niekerk, Technical Director, Tongaat Milling addressed Congress on Nutrition of Beef Cattle in SA.

After this all delegates were transported by busses to Gold Reef City where they were entertained by Zulu dancers, shown how the gold is melted and finally ends in a gold bar and had a guided tour down the closed mine. They ended the day with a dinner at Gold Reef City.

TUESDAY, 17th APRIL: Dr James O Sanders, Dept. of Animal Science, Texas A & M University, USA addressed the delegates on the current status and future role of zebu types in the US beef industry.

The delegates were afterwards treated with a braai hosted by Roderick, Martin and Purdham.

WEDNESDAY 18th APRIL: Breakfast was very early because everyone had to be at the Show grounds at 7:45 A.M. as judging started at 8:00. Martin Seyfferdt and Prof Frans Swanepoel were the judges with 419 animals entered. During the morning judging session we had an impressive flag raising ceremony.

The Senior and Grand champion cow was awarded to Locklore Lucy exhibited by AJS Lock and the Senior and Grand Champion bull was awarded to Sansa JL86 102 exhibited by HB Louwrens & Sons.

THURSDAY 19th APRIL: All breed Presidents gave their closing address mid-morning in the sale complex.

The judging of the World Champion Santa Gertrudis bull. At 2 pm all the imported bulls plus the Grand Champion of SA were escorted into the main arena by marching drum majorettes bearing Santa Gertrudis flags and banners. The 3 judges, Martin Seyfferdt, Forest Pickett USA and Rod Murchison Australia set about judging the World champion before an estimated crowd of 10,000 people. The champion was Yarrawonga Xmas from Australia and the reserve champion was JL86102 from SA. Then the grand parade of all animals took place with the Santas leading the parade The Santa Gertrudis Banquet was at 7:30 P.M. with 400 guests. Mr Cyril Green was the master of ceremonies.

FRIDAY 20th APRIL: The sale of bulls took place at the Rand Show cattle complex. Mr Barry Purdham was the auctioneer. In lot order the following:

<table>
<thead>
<tr>
<th>Bull</th>
<th>Price</th>
<th>Buyer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yarrawonga Xmas</td>
<td>R95,000</td>
<td>Sold to Keith Clubb</td>
</tr>
<tr>
<td>Yarrawonga Zorro</td>
<td>R65,000</td>
<td>Sold to A J S Lock</td>
</tr>
<tr>
<td>Ibrox Park Bacchus</td>
<td>R195,000</td>
<td>Sold to G Botha</td>
</tr>
<tr>
<td>Calga West Barry</td>
<td>R40,000</td>
<td>Sold to Oscar de Freitas</td>
</tr>
<tr>
<td>Five Oaks Pogo</td>
<td>R70,000</td>
<td>Sold to WLT Klopper</td>
</tr>
<tr>
<td>Kubecka 888</td>
<td>R100,000</td>
<td>Sold to Harm Marx</td>
</tr>
<tr>
<td>Wendt -3137</td>
<td>R60,000</td>
<td>Sold to Louis Botha</td>
</tr>
</tbody>
</table>

Immediately after the sale all delegates went by bus convoy to the Kruger National Park and stayed for 2 days in the park.

MONDAY 23rd AND TUESDAY 24th: Visited farm of Mr Fanie de Kock at Nelspruit and then to F H Odendaal holiday resort via Graskop, Pilgrims Rest and Sabie. Departed early to Delmas to Elikas Vos Stud farm of Gunther Pendzialek and Paul Yiannakis. Here the Congress came to an end.
South African Champions of 1990

Ibrox Park Bacchus

Calga West Barry

Five Oaks Pogo

Kubecka 888
An hour and a half of panel discussions and many good questions and answers still left many questions unanswered and many enrollees obviously confused. The fertility of the Santa Gertrudis and the ever important relationships between growth rate, frame size and carcass quality are some of the main topics that were dwelled upon. Surprisingly, these were the areas where, in spite of a dearth of information, consensus seemed to be lacking. At the request of the Congress and for the information of stud and commercial breeders, a summary of the most important aspects of fertility, growth and carcass quality is presented for inclusion on the proceedings of the Congress.

Fertility of the Santa Gertrudis

Whether an individual animal is concerned, male or female, or a single herd or the entire Santa Gertrudis breed, fertility is the key to success. Traits like growth rate, frame size, carcass quality or conformational features are important and have great genetic and commercial value. It will be counterproductive and indeed short sighted in the long term for any breed society, stud or commercial enterprise not to make fertility the prerequisite and primary objective. Adaptability and fertility are interdependent and both are closely related to feed intake and growth ability. This means that for any herd to maintain a high level of fertility, several other links in a long chain of requirements for overall productivity need to be good.

The following pertinent facts about beef cow fertility are well substantiated with research results in many countries and there is no need for any doubt confusion about any of them.

Fertility in heifers

The early conception of heifers, their weaning of a healthy and growthy calf and re conception within the required time is highly important features in the foundation of a fertile herd. It must be remembered that 10 per cent of all heifers that are born, are of low fertility or even sterile and a further 10 present have reduced fertility. These are the individuals that must be eliminated.

The age at which heifers should conceive, vary according to environmental variations. Heifers in a favourable nutritional environment must conceive at an earlier age than animals on harsh and extensive systems. Individuals that are slower to conceive than their herd mates are very likely candidates for a life-time of poor reproductive performance.

Superiority in growth rate or carcass quality can never compensate for reduced fertility. The danger lies when the market value of an animal is elevated through show awards and famous bloodlines to such an extent that culling on fertility performance is no longer possible.

Body size

Body size and frame score enjoy great popularity and market value, but neither is directly related to functional efficiency or fertility.

Large framed types grow faster, but they eat more. Their carcasses mature at a later stage and higher weight than the smaller framed early maturing types. Large framed cattle types, therefore, satisfy the requirements for feedlots better in terms of a positive feed margin and they yield leaner meat and heavier carcasses. However, in terms of feed conversion efficiency, the overall difference between large and small framed cattle types is negligible. It should be remembered that exactly the same quality carcass that is attributed to large framed cattle types can be obtained from small framed types. The key is the physiological of carcass maturity.

In extensive regions and harsh environments it pays handsomely to settle for a slower growth rate or smaller body size in cattle, rather than to jeopardise fertility.

Carcass quality in beef cattle is a powerful merchandising tool, particularly in these times where lean meat is linked to human health. Economically, therefore, carcass quality pays in certain ways, but it can never compensate, for
Conformation

Mature cows and bulls should never be judged in terms of beef quality or cut ability, because their secondary sexual characteristics obscure their beef conformation. In females in any event, mature size and even body weight is controlled by female characteristics, which develop strongly in good mothers that calve regularly. Top cows always remain slim and they are never heavy and fleshy.

Bulls likewise have good slaughter type conformation for a limited period only during their development. After this stage, sexual development and secondary sexual characteristics are responsible for the masculine conformation of bulls. This leads to heavy front quarters and neck and good meat quality becomes obscured in the conformation and body profile of bulls.

It is wishful thinking and a fallacy to say that a particular animal and usually a bull are outstanding in terms of carcass quality by carrying more weight or flesh in the expensive parts of the body.

All surveys in any event indicate that variations within breeds are usually of higher magnitude than between breeds. This implies that breeds differ less than observers and enthusiasts would like to admit, but also, it implies that the doors are wide open for meaningful progress through selection for the right traits.

Breed characteristics can be categorized in two groups, namely biological traits and commercial traits. The former includes fertility, growth ability, and adaptability and carcass traits. These are all measurable, the heritability of these traits is well worked out and their impact on a herd or breed is predictable. Commercial features, on the other hand, include blood lines, show awards, pedigrees and even the concept of a breed per se. The impact of these features are not accurately predictable, neither are these traits measurable, but they do not carry great economic significance nor they can exert a major influence on productivity.

A discussion therefore on The Santa Gertrudis — Quo Vadis? Can arrive at very positive future predictions for this breed, provided there is no confusion between two highly important objectives, namely promotion of biological features and the promotion of commercial features.

Santa Gertrudis breeders must have no doubt about the priorities of their breed. This includes an immediate strategy to raise fertility to the maximum and to rid this fine breed once and for all of all reservations about fertility. This is possible within one decade. Secondly, caution is needed not to over-accentuate carcass quality to the peril of more important attributes. Likewise, caution is needed with all promotional endeavours not to elevate the value of individual animals to a level beyond their genetic merit. All the other requirements, biological or commercial, to ensure a great and secure future for the Santa Gertrudis, will come easily and naturally.
In his relentless drive to inhabit the earth and to procure sustenance for his teeming millions, man has occupied increasingly unfavourable environments. To harvest the grass, indigestible to himself, of the seemingly endless pastures of the continents, man ingeniously employed ruminant livestock. In this he was singularly successful. The savannahs and grasslands of the tropics and subtropics, however, presented a challenge to utilisation as domesticated livestock, to varying degrees, was susceptible to heat, parasites, diseases and nutrient deficiencies. Increasing the production from livestock under such conditions received considerable attention all over the world, especially since the turn of the century.

In South Africa a number of pastoralist and scientist pioneers, some unsung, some world renowned, contributed to putting livestock production in unfavourable areas on a stable footing.

After the rinderpest and the devastations of the Anglo-Boer War, the depleted cattle population of South Africa had recovered quickly. One of the reasons was importation of large numbers of European breeds which, however, proved to be lacking in adaptability. The local adapted breeds, including the Afrikaner, were considered to be “slow-maturing and lacking in beefiness” and farmers and the scientific community considered various ways to improve their stock.

The work being done since 1910 on the King Ranch in Texas of breeding hardy adapted Zebu cattle to high quality non-adapted British beef cattle was probably along the lines of thinking by many South Africans. One of these was Professor AM Bosman, then Chief of the Division of Agricultural Education and Extension and Professor of Animal Husbandry, University of Pretoria, who recommended cross-breeding native stock and purebred cattle in his book, Cattle Farming in South Africa (1932).

After considerable initial success in creating adapted high producing cattle for the hot conditions of south west Texas, the King Ranch imported Afrikaner cattle to experiment with in 1931 (5) or 1932 (15).

31 head of Afrikaner cattle from herds of PG Theron, F Versfeld, G Bennet and Jozeph du Plessis of Kroonstad were exported to the King Ranch and the Kennedy Ranch (14), including at least 16 bulls (Payne, 1970). Some of these cattle were loaned to the USDA at Jeanerette, Louisiana, for crossbreeding experiments. (6) Such events do not go unnoticed. It was, therefore, at the latest in the early thirties that South African cattlemen took note of the King Ranch and its breeding successes. As early as 1933-34, Prof AM Bosman sent Dr DJ Schutte, the Senior Animal Husbandry Officer in his department, to the USA. His “Report upon an Investigation into Certain Aspects of the Beef Cattle Breeding Industry in the USA and its Application to Cattle Improvement in the Union” was published in 1935. In it he reports extensively on the King Ranch methods and their relevance to creating a local adapted breed employing the Afrikaner. The history of the development of the Santa Gertrudis breed on the King Ranch makes fascinating reading, but has been written before, and is beyond the scope of this article. It should suffice to say that the development of an adapted breed from its tens of thousand head of cattle on more than half a million hectares was a means of survival and not a rich man’s whim. The probably most welcome additional income from oil accrued to the Ranch from the forties, many years after the breed had come into existence.

During the thirties experiments, in which Afrikaner cattle had been crossed with British beef breeds and the offspring evaluated in terms of performance, were already in progress in South Africa (5) (6). Dr Schutte, in his report, makes the following interesting remarks, referring to these results with Afrikaners, Herefords and Sussex at Potchefstroom School of Agriculture and also to his experiences on the King Ranch: “Crosses between the Afrikaner and the British breeds do not show heterosis comparable with the crosses between

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H SCHNEIDER-WATERBERG, 1994
Zebu and the British breeds... On the other hand, the Afrikaner / Zebu cross, although definitely inferior in beef conformation, nevertheless shows considerable vigour. The writer’s investigation on the King Ranch tends to show that one should not expect as good results with the Afrikaner in crossbreeding work as was obtained in Texas. The results obtained up to the present by the King Ranch in their crossbreeding work with the Afrikaner on the British beef breeds are somewhat discouraging, in view of the fact that among the Afrikaners imported into the USA were individuals which represented the best of the breed in the country.” (14)

Although Dr Schutte in his report outlines a breeding project along the lines adopted by the King Ranch - at that early stage apparently already about to be implemented in SA - importations of Santa Gertrudis or Zebu cattle were apparently not considered.

Both breeds, the Brahman and the Santa Gertrudis, were, however, still developing and had not been recognised as such, and the thinking was understandably in terms of using local and indigenous cattle.

This task of creating a local breed was left in the capable hands of Jan C Bonsma, who in 1936 had returned from postgraduate studies in the USA. (4) Professor Bonsma (Livestock Production, 1980) reports as follows: “I, having visited the King Ranch the previous year, was entrusted with the task of developing a new breed of cattle. Professor AM Bosman instructed me to evolve a breed similar to the Santa Gertrudis.”

The inevitable, however, had to happen. After the upheaval of World War II and the financial and other constraints of its aftermath, international communications and trade and the world in general were slowly getting back to normal. Farmers and breeders were getting out of the straightjacket of a war economy and were looking towards a better future. Science had taken large strides, the development of Africa beckoned. In the early fifties, enterprising cattlemen imported Brahmas into Southern Africa. This was now a recognised breed, and it created an immediate demand for Zebu type cattle, due to the superior heterosis and adaptability of their offspring. The other available breed, which offered not only Zebu genes but also breed purity and a uniform red colour, was the Santa Gertrudis.

In the meantime, the local breed creation had progressed at Mara and it was to be known as the Bonsmara.

Comparisons are odious, but sometimes necessary. It was felt by the Department of Agriculture (4) that it wanted to compare its creation with the Santa Gertrudis as its original model and yardstick of an adapted breed. Dr DM Joubert, then Director of the Transvaal region, reports on this as follows in 1975:

“Private importations of Santa Gertrudis cattle soon followed and the Department of Agriculture too acquired a batch consisting of 20 heifers and three bulls which arrived at the Mara Station in the Northern Transvaal on April 20, 1956. The bulls carried the well-known King Ranch brand, while the heifers were obtained from other breeders in Texas. Experts considered the animals as being a reasonably representative cross-section of the breed at the time. The cattle and their offspring remained at Mara for evaluation purposes until 1964 when it was decided to transfer the herd (consisting then of 44 breeding females and several bulls) to the Omatjenne Research Station in South West Africa. A number of factors encouraged the decision: It was abundantly clear, first that the Santa Gertrudis was capable of excellent performance under the conditions of climate and nutrition ruling in the Northern Transvaal. On the other hand their achievements did not surpass those of the Bonsmara - to which breed Mara was obviously dedicated to such an extent that their continued maintenance was entirely justified. Matters were moreover brought to a head by the threats of a drought which subsequently proved to be the most prolonged and most severe affliction to have crippled the Northern Transvaal this century. The object of the Mara exercise was patently a scientific one and at the termination of the trial, one expects therefore from scientists in charge, their absolutely unbiased deductions. Apart from the factual information provided earlier (in this article) the consensus of opinion was that the Santa Gertrudis contained within its ranks some really outstanding individuals, capable of unquestionably superior performance. But the rather obtrusive variation within the herd - noticeable even without previously analysing the breeding records - pointed to a very distinct need to select severely within its ranks. However, the above favourable results, along with the other advantages of the breed, did not mitigate entirely certain shortcomings. There was clearly a need to select for temperament, and the problem of a protruding sheath (that is the internal part of the prepuce proper) among bulls was no doubt a very real one.”

Dr Joubert in his article then goes on to suggest a place for the Santa Gertrudis and the Bonsmara in a future well-managed performance-orientated cattle industry in Southern Africa. I quote from Dr Joubert’s article at length because little else of scientific value is known about the comparative performance of the breed at Mara and Messina. Yet, the stay at and quiet disappearance of Santa Gertrudis from Mara and Messina and the subsequent excellent performance of the self-same cattle at Omatjenne have raised questions, which influenced the history and development of the breed in South Africa (10, 13, 2, 9). No records accompanied the
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cattle to Omatjenne or could be obtained afterwards (2) (1). According to evidence available at Omatjenne not 44 breeding females came from Mara in 1964 as reported by Dr Joubert, but 23. More than four years later (1) the rest of the herd of 36 cows, 5 heifers and six bulls were transferred from Messina to Omatjenne.

Some of the cattle transferred to Omatjenne seemed to have slight infusions of other blood (13) (2). But, as Kelley says in his book (5), some questions are not asked!

Some features of Dr Joubert’s article may elicit comment: The Mara Santa Gertrudis arrived in South Africa in our autumn, which could have adversely affected the adaption of some of the cattle, as they would have kept their winter coat for a whole year. Second, the adult weight of the bulls (662 kg) was below breed average by at least a 100 kg, and it would have taken special effort, even on the King Ranch, which at the time had slightly smaller cattle, to find such animals.

Third, while temperament is as highly heritable in the Santa Gertrudis as in other breeds, temperament is not a problem in the Santa Gertrudis, and it is easy to avoid the few nervous animals offered. Admittedly though at the time the nervousness of some Zebus and their offspring may not have formed part of the conscious selection criteria of South Africa.

Historians should not speculate, but it is hard not to think about the benefit that could have accrued to the South African cattle industry if more Santa Gertrudis genes had been included in the Bonsmara, or if the Santas had been picked and selected with the same amount of scientific dedication invested in the Bonsmara.

The situation is probably summed up best by Frank Leigh, who as a classifier for SGBI, visited South Africa to classify Santa cattle probably in early 1962, and who reports on his visit in "The Cattleman" of June 1962:

“The South African Government also has a herd of Santa Gertrudis, but I found the men in charge, though not anti-Santa Gertrudis, more occupied in their own cross-breeding and Afrikaner stock than ours. There is quite a tendency to believe that no breed is good universally and that every region should have its own breed, which is well and good, but not too practical and too time consuming. I suppose experimental stations are the same worldwide when it comes to experimenting with crosses, however, I do believe that a sound programme of using good Santa Gertrudis bulls generation after generation, will produce offspring from a practical standpoint, equal to any, and the end product will be a breed not a cross.” (8)

The Department of Agriculture exhibited some of its Santa Gertrudis cattle at the Rand Show in 1957 according to “Farming in SA” of that year. There was a certain amount of interest in the breed. Importations were made into the then Southern Rhodesia by DC Lilford and Sir Patrick Fletcher and Imperial Cold Storage’s Nuanetsi Ranch. (8) The first importations into South Africa, a bull and three heifers, were made in 1954 by Mr Ivan Wentzel of Imperial Cold Storages (14) (15) (8) and by Mr EM Gant (1957) of Cape Town. (6, 8) Mr Gant imported about thirteen females and three bulls to Jarroson Estates near Vryburg; at that time already under the management of Mr H Koster. Jarroson Estates exhibited these cattle at local shows, probably Delareyville and Vryburg, and did some impressive crossbreeding. (6) According to Mr Koster, the lack of a local breeders’ association coupled with the inconvenience that no SGBI classifier had therefor to be flown in, and the difficulties with import permits because the breed had not been recognised in SA as well as Jarroson Estates’ interest in their Hereford stud, caused them to sell their cows to a breeder in Natal in the sixties. ICS went in for artificial insemination at Nuanetsi and had 97 first cross cows there in 1962. In South Africa at their Sanbra Charlim farm near their headquarters at Pretoria, there was some evidence of venereal disease among the Santa Gertrudis and the cattle were sold. A bull was sold to Don Hillhouse, kindling his interest in the breed in 1960. Other early importers were Tugela Estates of Mr CR (Roly) Taylor around 1960, as well as Mkuzi Estates of Mr MIP (Mike) Rattray, both of Natal. (9) (3)

Import permits were increasingly difficult to obtain and, generally, a lean time was experienced by the breed during the first half of the sixties.

But things were changing again in the livestock industry, opening up new opportunities. Let a man report who was there at the new beginning. He is Vernon Murray and he has the following recollections, which I quote verbatim, on how he sees:

“The beginning of the development of Santa Gertrudis in South Africa

“Exports of refrigerated beef from South Africa grew to quite sizeable proportions in 1963. This brought about an export grade which demanded a carcass with improved conformation and less fat. Knowledgeable senior technical officials from Vleissentraal, myself included, started calling on beef producers to select suitable cattle for export slaughter. This process created the first opportunity to convey carcass knowledge from the technicians to the cattle farmers who, in the past, concentrated only on the appearance and conformation of the live animal. Cattle farmers also attended the slaughters and gained a better understanding of market demands.

One of the farmers that I called on late in 1963 and early in 1964 regarding export slaughters in East London, was Don Hillhouse from Post Catherine, Indwe, in the
Eastern Cape. His Shorthorn cattle with their localised fat and insufficient musculature barely complied with export demands. Don was interested in an alternative breed, and our discussions resulted in a decision to import Santa Gertrudis cattle.

Don tried to obtain an import permit, but due to the policy of the Department of Agriculture, based on the views of Prof Jan Bonsma, he was not successful. Prof Bonsma insisted that the Santa Gertrudis could offer nothing more than was already available in the Bonsmara.

Don did not give up. He visited me in Grahamstown where I was Vleissentraal’s Branch Manager and Head of the new Vleissentraal Stud Animals Department. He requested me to obtain a permit for him and to accompany him to the USA to assist him with the acquisition of the cattle.

At this stage, there were four Santa Gertrudis farmers in the country already, namely Mara Research Station (the cattle were already, via a detour at Daniëlskuil, on their way to Omatjene), Roly Taylor from Estcourt, Mike Rattray from Mkuzi, and the AI farm of Mr Ivan Wentzel of Imperial Cold Storage at Rosslyn in Transvaal. By arguing that refusal of a permit to Don Hillhouse would create an unfair economical benefit for these four owners, a permit could finally be obtained for importing 20 heifers and a bull from the USA. In June 1965, Don and I went to Texas to study the breed and to purchase the animals.

Before our departure, a thorough study was made of the history of breeding policy, distribution of the breed over the world, and particular attention was given to the statistics of herds in the USA. Finally, a decision was made to buy only from herds older than 25 years, and who had more or less 1 000 approved stud cows to make sure we acquired only established and dependable breeding material. The tour commenced in Kingsville, Texas, at Santa Gertrudis Breeders International, where Buddy Smith took us to various breeders to bring us up to date with the standards and aspirations of the breed.

After two weeks we began visiting herds on our own and took options, and eventually we bought cattle from John Martin, Dinn Ranch, Briggs, and Nine Bar. At Martin we were allowed to buy the five best heifers from the group they intended to hold back – probably the best heifers to ever come to the country. Only more time, in 1968, was I allowed to select from Martin’s top herd.

After Don’s cattle arrived in the RSA, the newspapers had quite a lot to write about the Santa Gertrudis, and my enthusiasm probably contributed to a request by Hennie le Roux from Heuningspruit, Kroonstad, to go and buy him a herd of 40 animals.

Heiner Schneider-Waterberg from Otjiwarongo also discussed the breed with me, and he decided to accompany me to the USA. In June 1968 we departed with permits for him and Hennie. I bought 40 heifers and 2 bulls for Hennie from the herds of Dinn, Martin, Nine Bar, Briggs and Winrock. Heiner bought 17 bulls and 5 heifers from the same herds.

In July 1969 Heiner and I went to the USA again, mainly to buy Brahmans, but all the same I bought heifers and a bull for Andrew Savage from Port Elizabeth, and a bull for Don Hillhouse. Heiner once more bought Santa Gertrudis bulls. The purchases were made at the abovementioned herds, but to broaden our insight into the breed, we called on more herds and also bought cattle from Callan Ranch and Tobin Armstrong.

The next farmer who showed interest was Tony Brink from Derdepoort, Zeerust, and in 1970 I went over to buy 50 heifers and 3 bulls for him. I once again bought from the herds Martin, Dinn, King Ranch, Nine Bar, Briggs, and Winrock.

In these years the Santa trend broke loose in the country, and in August 1972, I joined Heiner, Ettienne Botha from Otjiwarongo, and Piet Dros from Potgietersrus on a trip to Texas. We also bought cattle for Ouboet Botha from Kalkfeld and Mr Claassens from Parys. Once again we bought from Martin, Briggs, Winrock, Nine Bar, King Ranch and Dinn, but this time also from Fairview Farms and Tom Crews from Alice.

In October, Heiner and I went over once more, and this time I bought cattle for Gerrie de Jong from Howick, who later joined me. We bought from the same herds again, but this time also a few heifers from a herd that sold out, and more heifers from BK Johnston from Chaparosa. More than 100 Santas were bought for Gerrie, and this time the cattle where flown to South Africa in two planes, together with a consignment of Friesians and Brahmans, in order to cut costs. The two planes touched down in January, one at Jan Smuts Airport and the other...
Was this sudden interest in Santa Gertrudis a fad which would peter out? Definitely not! Within ten years of the 1968 importations, the breed had been recognised by SA Stud Book. In 1974 we already had 250 members with over thirteen thousand registered cows and more than two thousand bulls.

What had happened? There were several reasons for this remarkable development. First of all the Government was relaxing import control, and permits were once again available. Then the rapidly improving Omatjenné results of the performance of the Mara/Messina Santa Gertrudis were widely noted. In a survey conducted among early breeders in 1974, one out of four mentioned the Omatjenné results as an important influence on the decision in favour or the Santa Gertrudis. Generally, there was a change in outlook of cattlemen. The time was ripe for a new adapted breed, which performed as well as a crossbred but was pure, or could be upgraded to a recognised beef breed, yet would be suitable for the emerging demands of the feedlots. Brahman crossbreds, also, were increasingly in evidence everywhere and breeders were thinking about what to do with their crossbred cows. Farmers started to look around for a bit of Brahman blood in growthy animals with length, good bone structure, good temperament, red colour, high weaning weights and good feedlot performance: The Santa Gertrudis had it all.

The breed was also fortunate in having the support of Mr Vernon Murray. At the time he was Head of the Stud Section in Pretoria of the then giant Vleissentraal Cooperative. Vernon had wide and longstanding experience of the cattle industry, was a well-known breed and interbreed judge, had travelled widely in Europe and the USA to import cattle for various breeds and breeders, and was widely known, trusted and respected. Between 1965 and 1973 he selected or helped select literally hundreds of Santa Gertrudis for import, and due to his work advised and helped with and organised the importation of probably thousands more. He also acted as Secretary for the newly fledged breeders association during its difficult first years on its way to recognition as a developing breed in 1972, before he resigned in 1973, a year before full recognition in 1974.

At the present time, the Santa Gertrudis breed again seems set to benefit from emerging tendencies in the industry. It has already proved its superior feedlot performance and feed conversion. Should developments, however, make feeding and supplementation less economical, very little selection within the breed will be necessary to identify and emphasise those bulls which are also high producers off grass. This ought to be facilitated by the recently proven low correlation between the feedlot performance of bulls and their sister’s and daughter’s performance on grass.

Selection for bulls doing outstandingly well on grass in a breed especially developed for this purpose will be swift. The Santa Gertrudis breed in South Africa might well be at the threshold of another spectacular expansion phase!
CJ ANNANDALE

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DRIE RIVIERE | GAUTENG
1. Introduction

Zebu and zebu derived breeds, such as the Santa Gertrudis play a dominant role in beef production in tropical and sub-tropical parts of the world (Swanepoel & Hoogenboezem, 1993).

These breeds have distinguishing characteristics of a hump located over the shoulder and more skin than Bos Taurus breeds in the dewlap and sheath area. The sheath, also called the naval flap, occurs in both sexes and varies in size and shape. In males a large sheath is often pendulous, may interfere with natural mating and tends to be associated with an increased incidence of prolapse of the parietal layer of the prepuce. These sheaths are more subjected to injury and infections, which may cause lower calving percentages.

Little is known about the heritability of sheath development and its relationship with growth performance. The purpose of this paper therefore is to look more closely into the relationship of sheath area to Phase D growth performance of Santa Gertrudis bulls.

2. Data used in this project

Phase D growth test results from two stud herds, one in the Western Transvaal and one in South Eastern Free State, were used in this study.

Phase D is an “On Farm Growth Test” for stud and commercial bulls, co-ordinated by the South African National Beef Cattle Performance and Progeny Testing Scheme.

Sheath areas were calculated by photographing each animal in front of a grid of known measurements from a standard distance. This technique has been used previously (Franke & Burns 1985).

Bulls were divided into two groups according to their average sheath area. The average sheath area was 470cm² - 28, bulls below the average, with a mean of 378 ± 69cm² (small sheath group; SSG) and 27 bulls above the average, with a mean of 619 ± 161cm² (large sheath group; LSG).

3. Literature review of sheath area and its association with pre-weaning growth

Data from 439 Brahman calves were used to estimate heritability’s and correlations for sheath area and pre-weaning growth traits. The heritability for sheath area was 0.45, while the genetic correlations between sheath area and birth mass, pre-weaning ADG and weaning mass were 0.23, 0.58 and 0.52 respectively (Franke and Burns, 1985). These results suggest that selection could be effective in reducing sheath area, but it could be antagonistic with pre-weaning growth traits.

The phenotypic correlations between sheath area with pre-weaning growth rate and weaning mass were 0.27 and 0.29 respectively (Franke and Burns, 1985). Because of the relatively low order of these correlations, continued emphasis on increasing weaning mass could be maintained with careful attention to culling calves with large sheaths, through independent culling levels or index selection.

Selection practised for increased pre-weaning growth rate or weaning mass could result in a proportionate increase in sheath area at weaning. The relatively low phenotypic correlations between pre-weaning growth rate and weaning mass sheath area which indicates that selection could be emphasized for growth traits along with some emphasis on smaller sheaths. Because large sheaths tend to cause problems under natural mating conditions, careful attention to sheath area of males selected at weaning or yearling age, could decrease the incidence of sheath problems without reducing significantly selection for pre-weaning gain or mass (Swanepoel & Hoogenboezem, 1993).
4. **The association of sheath area with phase D growth results.**

The latest squares means for various traits are presented in Table 1, while the correlations between scrotal circumference and growth parameters are presented in Table 2.

<table>
<thead>
<tr>
<th>Sheath area (cm²)</th>
<th>Below 470 (cm²) SSG</th>
<th>Above 470 cm² LSG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of bulls</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>Final mass (kg)</td>
<td>437 ± 61</td>
<td>503 ± 63</td>
</tr>
<tr>
<td>ADG (g)</td>
<td>1395 ± 203</td>
<td>1513 ± 163</td>
</tr>
<tr>
<td>Sheath area (cm²)</td>
<td>378 ± 69</td>
<td>619 ± 161</td>
</tr>
</tbody>
</table>

The results in Table 1 indicate a significant increase in:

- ADG of 118g (8.5%), in final mass of 66kg (15%) and in sheath area of 241 cm (64%) for the large sheath group.

From the results in Table 2, it is evident that sheath area is significantly correlated (0.31) to ADG on test, however, this correlation is of a low order.

Because of the relatively low percentage difference in growth rate, compared to the high percentage difference in sheath area, it is evident that sheath area variation is only partially accounted for by growth rate differences in bulls. This is also substantiated by the low correlation between growth and sheath area.

Furthermore, sufficient variation, as indicated by the large standard deviations of sheath area and ADG, is present for selection purposes. This is also supported by Bosman (1992).

Therefore, continuous selection for growth rate can be maintained, with careful attention to cull bulls with large sheaths. Large skin area, as indicated by a large sheath will not significantly affect growth rate of bulls under phase D conditions. It is therefore possible that bulls with an above-average growth performance and an acceptable sheath can be selected for breeding purposes.

5. **Conclusions**

- Large pendulous as well as prolapse of the prepuce detrimentally affects natural mating of bulls.
- Because of the high heritability of sheath area reported, selection against large sheaths would be effective.
- Selection for increased weaning mass is possible with careful attention to avoiding calves with large sheaths, through independent culling levels.
- Under phase D growth conditions, it is possible to select bulls with above-average growth performance as well as acceptable sheaths.

6. **Acknowledgements**

The authors wish to gratefully acknowledge financial assistance provided by the Santa Gertrudis Cattle Breeders Society of S.A.

7. **References**


*Paper prepared as part of a research project. Authors commissioned by Santa. Gertrudis, South Africa.*

Department of Agriculture, University of Zululand, KwaDlangezwa.

Department of Animal Science, University of the Orange Free State, Bloemfontein.
This gathering of Santa Gertrudis (332) was without fear of contradiction, the finest collection yet put forward in South Africa. In fact I find it hard to believe that we can improve on this. However, as the saying goes, “in the race for perfection there is no finish line”. What was a real eye opener was how very few of the cattle on show were sired by bulls that were not SA bred. A point that I have been suggesting for some time, is that our own SA bred bulls are breeding better than what we can find overseas. I don’t believe any breed has made such tremendous progress over a short period of time as we have done with Santa Gertrudis in South Africa. One only has to dig out our Santa Journals of 10 years ago to find conformation of this. The breed has now been adapted to its environment.

During the course of the year, as many of you would have read in the Press, there were serious eruptions within the ranks of SA Stud Book, culminating in the resignation of the General Manager. Without going into the whole saga in detail, what transpired, was that the Government passed a Bill that Breed Societies could form their own “Registering Authority”, subject of course to certain rules and regulations. Council went into this option and after much soul searching decided that we would be better off by breaking away from SA Stud Book.

Together with the Simmental/Simbra Breed Society we have decided to form our own “Registering Authority”, which is in the process of being drawn up.
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Recently Santa Gertrudis South Africa released a list of the
50 MOST INFLUENTIAL BULLS IN SOUTH AFRICA.
The JOCHARL STUD is both humbled and honoured to be associated with
7 of the bulls on this list.

Bull # 1: Wyhanka Toffie Appel. Bred by Hans Brits. The Jocharl stud bought Toffie Appel from Jannie en Bertie Wessels but unfortunately, he died soon afterwards. Luckily, we had enough semen available to start an intense AI program which proved very successful.

Bull # 12: Sombrero Jeff. Bred by Piet Nel out of Dan 765 (Bull # 5 on the list of influential bulls). The combination of Toffie Appel and Sombrero Jeff proved a winner and many of our stud sires were bred from these bloodlines including: Jocharl 90-001, Jocharl 91-043 and Jocharl 91-040.

Bull # 27: Jocharl 85-019. Out of the Locklore Ceaser (16) bloodline. Jocharl 89-051 (son) was sold to Harm Marx and Amy Williams had a share. Garth Ellis won the gold cup at the Pietermaritzburg show with a daughter of his.

Bull # 30: Jocharl 91-075. A son of Rosan Quisto 85-12 that was originally imported as an embryo from the USA by Armando Bolloco (Chapparosa 988 bloodline). He was the Junior champion at Pretoria show.

Bull # 37: Ganado Rojo Barry. Son of Australian bull Galga West Barry that was imported for the 1990 World Congress. The bull JC 96-107 was bred from this bloodline. Fanie de Kock and Amy Williams had shares in him.
A. HISTORY

1. Developments up to 1966

The cattle operation on Okosongomingo has since its origins in 1909 been a commercial cow-calf production enterprise with pasture-produced oxen and cows being the source of income. Bull sales were never more than an incidental sideline, while agronomy and/or feed production for stock never proved to be feasible.

During the nineteen thirties bulls of the “Red-and-White Schleswig/Holstein” breed were imported from Germany for improvement of the cowherd. This was a hardy dual-purpose breed well adapted to poor sandy soils adjoining the belt of fertile, heavy-soiled coastal low-lands of Northern Germany. These cattle crossed well with the existing stock on the farm and superior grade bulls of own breeding established a considerable infusion of Holstein blood in the herd.

During World War II, in the forties, some Shorthorn blood was introduced into the herd. After the war, during the fifties, “Red-and-White Schleswig/Holstein” bulls were again obtainable and imported from Germany. Artificial insemination was introduced and the herd further upgraded. This quickly resulted in a large, high-quality, dual-purpose cowherd of roughly two thousand strong, roomy cows. The drought period of the sixties, however, proved the new Holsteins to be a disappointment: - The breed had been “improved” in Germany during and after the war by strict selection for higher milk and beef production under a much improved feeding regime and by infusion of low-land type red and white Dutch “Rhyn-Maas-Yssel” blood. The result was that a lot of their former “hardiness” or pasture-based thriftiness had been lost and the cattle would not do as well under the extensive conditions of Namibia as could have been expected from the pre-war stock.

To remedy this, Zebu blood in the form of Brahman cattle, which had recently become available, was introduced, again mostly by insemination with high quality bulls. By the middle of the sixties a large number of very high quality, big, roomy, fertile, smooth-coated, good milking, vigorous half-bred Brahman Holstein cows were available.

Artificial insemination under our extensive conditions having proved to cause numerous management problems, a search for suitable bulls of a suitable breed for natural service now was a priority. Due to the large number of bulls required, the aim was to breed bulls for own use in the future. More than twenty Africander, many Brahman and some Charolais bulls were tried, but their offspring did not appear to be up to the goals envisaged: Africanders lacked growth and bone; Brahman upgrading produced too many culls for conformation, uniformity and temperament: (although a red and a white Brahman- herd of top animals was retained), while Charolais lacked adaptation, especially to ticks. All three breeds did not appear to be suitable for establishing a herd of cattle producing economically from pasture.
Continuous crossbreeding was not envisaged mainly because a reduction in cow-herds was an essential part of a quickly advancing fencing and farm development program with the aim of introducing a sophisticated program of rotational grazing. This involved the establishment of more than thirty water points, one-hundred-and-fifty camps and nearly 100km of pipelines. Due to a number of reasons, climatological, ecological, botanical - and hopefully - also logical, this program required short grazing - (maximum 3 weeks) and long resting periods (5 - 8 months) which again required fewer herds rotating through more (expensive) camps. The longevity of the Holstein-Brahman crosses was a boon in surviving these years of reorientation and crossbreeding experiments.

2. 1966 - 1968 - Why not Santa Gertrudis? Years of decision.

The search for a suitable breed produced very many opinions and much advice but very little fact and even fewer choices. Scientific work on actual performance testing of cattle on grazing especially in tropical and/or semi-arid areas was (and seemingly still is) non-existent, except possibly for the results of the Omatjene Comparative Study of Ten Breeds since 1950 right on my doorstep.

While this study certainly could be criticized on purely scientific (mainly statistical) grounds, its uniqueness created sufficient interest amongst the scientific fraternity for the then manager of Omatjene, Mr R, Borstlap, to be invited to deliver a paper on this experiment at the 2nd World Animal Production Conference, 1968, in Beltsville, Maryland, USA. The upshot of the Omatjene study was that most European (Bos Taurus) breeds - especially most British beef breeds - would not adapt to the hot sweet veld thorn bush savannah of Omatjene, although a few European breeds had at least shown a relatively positive response to selection for adaptation, while the “adapted” Africander did worse economically than even these selected European breeds.

What was, however, especially interesting to me in my search for a suitable breed were the two very late entries into the experiment of Bonsmara and Santa Gertrudis cattle from Mara in 1964. The Santa Gertrudis were from King Ranch in Texas of breeding the Santa Gertrudis. This unique pioneering in breed creation had elicited the interest of animal scientists’ worldwide, including South Africa in the thirties. The idea of doing something similar to the King Ranch and to build on its breed, although on a much smaller scale, increasingly made sense. This idea had not been pursued because importation of cattle was, at the time, against government policy.

It then appeared, however, in 1966 that an importation of Santa Gertrudis into South Africa had surprisingly actually taken place - made possible by the persistence of Mr Vernon Murray - for Don Hillhouse of Indwe. A change in government policy on importation seemed imminent. Mr Murray, the then head of the Stud stock section of Vleissentraal shared my interest in cattle with growthiness, muscling, length, strong flat bone and less localised fat deposits, which were adapted to heat and droughts on natural pastures.

We were both enthusiastic about the alternatives the Santa Gertrudis offered to the majority of breeds available in South Africa at the time, which favoured round-boned, blocky, “pretty”, so-called beef-type cattle with heavy localised fat deposits, which either had proved not to be adapted (at Omatjene too, which was of interest to me) or, in the case of the Africander and its derivatives, were small, slow growers. On balance, the Santa Gertrudis seemed best. As a result we visited Texas together in 1968 during the northern summer, which was stiflingly hot and in Texas of that year also very dry. I was strongly impressed by the Santa Gertrudis cattle I saw, and bought my first Santa Gertrudis to be imported early in 1969.

B. SANTA GERTRUDIS ON OKOSONGOMINGO 1969 1999

1. Choice and importation of Santa Gertrudis

In accordance with my intention to move away from A.I. and to produce my own breeding bulls from an upgraded and finally purebred true-breeding herd, I concentrated on importing bulls. Until 1975 a total of fifty-seven bulls and 28 heifers were imported in several batches after as many visits. As a rule animals were bought from herds in existence more than 25 years and with more than 1 000 cows, providing a balanced choice within genetic continuity. Stud quality bulls were bought one each from King Ranch (No. 700), Briggs (No. 500), and Nine Bar (No. 7193). Several above average quality bulls came from Nine Bar (4268, 7175, 149, 128 etc) and Briggs. The bulls picked, tended to be strong-boned, long, virile, muscular and possibly a bit “rough”. In fact, Mr Mieta Louw, the then Deputy Director of Agriculture for South West Africa (Namibia) criticized the coarseness of many of the bulls. Very high quality heifers were obtained from Martin, Briggs, Malsberger and Dinn. Further
animals were bought from Winrock, Tweet Kimball, King Ranch, Nine Bar, Callan, Armstrong, John B Connally and Hopper.

The imported cattle adapted well. Very few were lost, so few indeed that I did not even insure the last large consignment, which came by plane to Walvisbay. One bull suffered a long time from being shipped before it had shed its winter-coat and arriving here in our autumn, with the days getting shorter, and it therefore being unable to shed its winter hair coat for at least two seasons. A few bulls suffered from complications (nephritis and relapses) during their reaction to Anaplasmosis and Piroplasmosis. A few more were tested positive to Leptospirosis probably picked up from rats on board ship, but after treatment (streptomycin) during quarantine and thereafter were later tested negative and seemed none the worse for it. During the first years some animals developed intense temporary swellings, which seemed to be caused by allergies to tick-bite: Of special interest to me was the Maltsberger Herd (Herd No. 5!), as it ran a very large closed herd based on the first ever bull supplied by the King Ranch to any breeder in 1934 to Mr Maltsberger, a close friend of Mr Kleberg. The Maltsberger herd in the semi-arid West Texas was bred and selected for adaptation on grazing and appeared to be slightly lighter in colour and slightly leggy. The herd was purebred but not classified, but the heifers I obtained there had no problems to get papers, and their offspring is in many of my cattle.

2. Building a herd of Santa Gertrudis First decade - the seventies

Upgrading of my cowherds to Santa Gertrudis started as soon as the bulls left quarantine. The first batch of two hundred heifers, purebred and half-bred, showed that the Santa Gertrudis “nicked” well with the cows in my herd, and was a truly impressive group, dispersing any doubts about the “quality” of the bulls imported. Mr Mieta Louw was so impressed by these animals that he formally apologised for his previous criticism. A decisive observation for me was that although the crossbred mother-cows, especially the Brahman/Holstein, were of high quality, the best ten heifers out of those two hundred included all of the few available purebred heifers.

Indeed, to this day Santa Gertrudis purebreds outperform grades and crosses both under severe nutritional stress and under favourable grazing conditions. This flew in the face of conventional wisdom that “cross-breeds are better than pure-breds”, but was much needed encouragement for my plans to establish a self-sufficient uniform herd.

To me the only logical explanation of this phenomenon of the superiority of the pure-bred Santa Gertrudis was that it was practical proof of the genetic fact - unpopular and therefore often ignored by breeders and their advisors - that cross-bred offspring from a high performing pure parent like the Santa Gertrudis would be an improvement on an inferior parent, but could very well in spite of heterosis not necessarily reach the level of the superior parent. This was - and is! - The reason for upgrading to, and pure breeding with Santa Gertrudis and for not crossbreeding our whole cowherd.

Other welcome first observations were that cows were seemingly unaffected by the heat and would happily lie in the sun, would walk long distances, forage energetically and that cows would organise “Kindergarten” for their calves, while they went to the water. They did not have more ticks than the Brahman crosses and produced very small calves at birth with impressive weaning weights.

3. The second decade - the eighties.

The nineteen seventies had brought a number of good seasons. The Brahman crossbred cows were quickly being replaced by Santa Gertrudis grade offspring. Two breeding seasons per annum saved bulls. Santa Gertrudis females were only bred to Santa Gertrudis bulls. In-breeding caused no serious problems, as the bulls were not related. As the bulls grew older, self-bred bulls from the purebred herd started taking their place, although an accidental bout with a venereal disease (probably vibriosis) set the purebred herd back for some time. A few bulls were bought in, mainly from Etienne Botha’s Tokai stud. The purebred herd then posed another problem as the two bulls used (7193 and 700) were getting on in years and had to be prevented from serving their daughters. The late importation Briggs bull (No. 500) had never really lost his Texas winter coat and had not developed well, and it was with great trepidation that it was finally tried out in the purebred herd.

He surpassed all expectations and produced in 1978 a son “78 - 6” out of a very good cow. “78 - 6” Was appreciably better and better adapted (in spite of coarse wiry hair!) than anything I had on the farm. This bull was intensively used during the eighties and a second single sire herd was established which initially only consisted of his daughters and some of his half sisters.

4. The third decade" The nineties and consequences of 20 years of drought

Since the 1979/80 season for the next two decades and right up to the present (1999) the average rainfall dropped by nearly 20% against the previous eighty years plus average, and the main rainfall by 25% while the decade of the eighties brought four serious droughts and just one slightly above average year. The progressive degradation of the grazing without a chance for it to recover necessitated a complete rethink of stocking rates
WILLIAMS
SANTA GERTRUDIS

[Image of cattle]

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