YOUR COMPREHENSIVE GUIDE
The main problem of livestock production in the tropics and subtropics, the world over, was what became known as the tropical degeneration syndrome amongst the Bos Taurus breeds of cattle. The British beef breeds, namely the Shorthorn, Hereford, Angus and to a lesser extent, Sussex and Red Poll, did not thrive under the sub-tropical conditions of the ranching areas of South Africa. In the northern parts of South Africa, the altitude is 900m, average annual temperature 20 degrees centigrade (reaching 40 in summer) and the annual rainfall is 450mm. Before 1940 it was thought that tropical degeneration of the British breeds was caused by malnutrition. The protein content of natural pastures in the southern hemisphere is low, dropping to critically low levels during late summer and early winter. Because poor nutrition was considered to be the cause of tropical degeneration, a large-scale nutritional experiment was launched at the Messina Livestock Research station in 1937, using a large group of heifers of different British beef breeds. This brought Bonsma to the realisation that malnutrition was not the culprit. Amongst the heifers were individuals...
that thrived appreciably better than others. Careful observation proved that those which showed the least climatic stress thrived best. Those animals that showed signs of stress on hot days had a very high respiratory rate, they panted, their tongues hung out and they dribbled profusely. Because Bonsma wanted to measure every aspect of the livestock that he worked with, he made numerous observations on his experimental animals. These included regular weighing, 14 different body measurements, body temperature, pulse- and respiratory rates, hair counts per square centimeter and tick counts. Hair diameters were measured and complete hair coats of different types of cattle were shorn off, weighed and put through a felting machine. These elaborate tests proved beyond doubt that the hide and coat of cattle played a tremendous role in the process of heat dissipation, which is of the utmost importance for the animal to maintain its thermal equilibrium in the environment. Animals that suffer from hyperthermia have increased respiratory and pulse rates with concomitant metabolic, physiological and endocrinological disturbances. Animals with a respiratory type of body conformation, a wide forehead and convex facial profile are much better adapted to the tropics and sub-tropics than those with a digestive type of body conformation and a dished forehead and profile. It has been convincingly shown in several critical experiments, and it is only logical, that the larger the surface area of the nasal sinuses, the greater is the surface area available for evaporative cooling during panting.

It would seem reasonable, therefore, to assume that cattle with broad heads and a convex profile (“Roman nose”), would be able to cool their brain tissue more effectively than those with narrow heads and a concave profile. Afrikaner cattle are extremely well-adapted to hot and arid conditions. That they also have relatively large, broad heads with a convex Roman profile, appears to be of great importance in their physiological adaptation, and not merely a fancy point dreamed up by breeders.

Only after the climatological data on the various types of cattle were submitted to the late Professor A. M. Bosman, could Bonsma convince him that the proportion of blood in the new breed to be established, should be the opposite of the Santa Gertrudis, namely, 5/8 Afrikaner and 3/8 British beef breed (the santa gertrudis consisted of 5/8 British beef breed and 3/8 Bos indicus). The south African research showed conclusively that as soon as the British beef breed content of the Afrikaner/ Bos taurus cross went beyond 50%, signs of distress were encountered on hot days. At this early stage of the breed creation project it was not possible to decide which of the British beef breeds would give the best results when cross-bred to Afrikaner cows. After many criss-cross matings, the 5/8 Afrikaner, 3/16 Hereford and 3/16 shorthorn animals seemed the most satisfactory and became the new breed now known as the Bonsmara. Thanks to Bonsma’s unique method of scale photography, the Bonsmara is the only breed in the world that can boast a pictorial genealogy from the very beginning of the breeding work until the new breed was established.
The Bonsmara is the only beef breed in the world created through a well documented crossbreeding programme with the aid of objectively recorded performance data. Visual evaluation according to norms for functional efficiency are also strictly applied.

Bonsmara was bred at the Mara and Messina Research stations between 1937 to 1963 by scientists under the watchful eye of Prof Jan Bonsma. The name Bonsmara was derived from Prof Bonsma’s surname and Mara, where the first crossbred calves were born. Prof Bonsma and his colleagues constantly exercised crossbreeding experiments in about 20 commercial herds in different parts of South Africa, to finally establish the best performing crossbreed sample, 5/8 Afrikaner and 3/8 Exotic Hereford/Shorthorn.

The first Bonsmara bulls were made available to commercial cattle breeders in the 1950’s and soon were widely spread across South Africa and the rest of the world. This led to the formation of the Bonsmara Breeders Society in 1964. Other African countries which promptly accepted Bonsmara were Namibia, Uganda, Zimbabwe, Botswana and Zambia and the beef cattle industries of Argentina, Australia, Brazil, Paraguay, Colombia, USA and Uruguay.

Strict selection for economic traits such as fertility, milk production, growth and adaptability are still practiced. This has contributed to the reality that Bonsmara proudly succeeded in becoming the strongest and most professionally administered beef breed in South Africa. Bonsmara, the most prominent of beef breeds in South Africa, currently having the most registered beef cattle.

BONSMARA MISSION

While totally dependant on our Creator, the Bonsmara Cattle Breeders’ Society endeavors to be the leader in the beef cattle industry and to serve producers in South Africa and the rest of the world by:

Acting with credibility and integrity at all times. Promoting scientific, biological and economic efficiency. Promoting practical and efficient production methods. Supplying superior, market related breeding material to the industry. Supplying affordable, quality beef to all consumers.

Through these actions, the Bonsmara Cattle Breeders’ Society strives to make a positive contribution to the promotion of a balanced, environmentally friendly beef-cattle industry, which will benefit the population as a whole and support its members in viable business undertakings.
FEATURES AND CHARACTERISTICS OF THE BONSMARA

GOOD ADAPTABILITY ON THE VELD
For more cost effective production off the veld. Bonsmara was the first breed to inspect cattle with their production records. All Bonsmara cattle are inspected before breeding age and any not showing good veld adaptability, are rejected.

Well adapted Bonsmara animals can be identified by the following:
• Smooth coated in summer;
• well pigmented eyes, udders and hooves;
• strong constitution and
• sound feet and legs

Any animal with structural defects or those that are functionally inefficient, are culled.

GOOD MOTHERING ABILITY
As a result of intensive selection, calves are produced off the veld at very low cost.

Listed below are some of the most important mothering abilities:
• Early puberty - Bonsmara grow fast, mature early and breed at 12 - 18 months of age.
• Ease of calving – Bonsmara are known for their ease of calving, which is also of value in crossbreeding.
• Superior fertility – This important trait is maintained by strict selection standards.
• Good milking ability – Due to this factor, high weaning masses are attained.
• Low mortality.

GOOD GROWTH UNDER INTENSIVE AND EXTENSIVE CONDITIONS

GOOD CARCASS
Bonsmaras round off very well (in feedlots and on the veld) with best grading at a young age. Bonsmara has been the dominant breed in the national carcass competition winning it 8 years in a row.

DISPOSITION (TEMPERAMENT)
Bonsmara are docile animals, easy to handle and as a result require less labour.

CROSSBREEDING
Bonsmara plays an important role in any crossbreeding programme.

THE ROLE OF BONSMARA
The development and implementation of the Bonsmara System over many years, has scientifically moulded the breed to become the benchmark in breeding. Today the breed plays an important role in:

STUD BREEDING
Bonsmara is ideally suited to South African conditions. The purpose of stud breeding as seen by the Bonsmara Cattle Breeders’ Society, is to satisfy the needs of the commercial breeders. Bonsmara is also setting the pace by breeding cattle to perform in all environments by using scientific selection procedures.

CROSS BREEDING
Bonsmara bulls cross extremely well with a variety of breeds and types. Commercial breeders who continue to use Bonsmara Bulls will not forfeit productivity after the first cross. In fact, Bonsmara is a synthetic breed that performs extremely well in cross breeding programs.
FEEDLOT PERFORMANCE
Bonsmara has proved to be a popular breed for the feedlot market. Bonsmara’s feedlot performance is highly economical, their temperament is suited for the feedlot and tender meat of high quality is produced. Carcasses grade well from veld or feedlot, with high dressing percentages, even fat deposition, marbling and excellent muscle to bone ratio.

THE BONSMARA SYSTEM
The Bonsmara system is unique and the strict implementation thereof with a competent staff component contributes largely to the position of the breed in the beef industry.

THE SYSTEM RELIES ON FOUR FACTORS:
• Genetic material – a large gene pool;
• efficient machinery – to select the best genetic material;
• competent marketing – for efficient marketing strategy;
• dedicated manpower – coordinating all aspects of breeding

GENETIC MATERIAL

THE APPENDIX SYSTEM
Specially selected basis cows provide an important genetic base from relatively inexpensive commercial cows. These cows are selected by Bonsmara inspectors according to minimum breed standards. The cows are mated to S.P. registered Bonsmara bulls.

• Fully Registered (SP)
• Appendix B Female X Stud Bull (SP)
• Appendix A Female X Stud Bull (SP)
• Basis Cow X Stud Bull (SP)

LARGE COW HERDS
A large population is essential for effective herd improvement. Genetic improvement is limited in small herds. For this reason a minimum of 20 cows is a prerequisite for Bonsmara breeding. Bonsmara have the largest average herd size in comparison to all other breeds in South Africa.

COW NUMBERS
Rapid expansion gives momentum to the breed and also provides a large population for stricter selection.

SELECTED BULL POWER
Bonsmara bulls are subjected to phase C and/or farm growth tests in large numbers. The use of such performance selected Bonsmara bulls has contributed progressively to the improvement in growth and feed efficiency in commercial herds.

ARTIFICIAL INSEMINATION (AI)
The society controls the practice of AI in Bonsmara herds in accordance with the “Livestock Improvement Act of 1998”. A wide variety of genetics are available through AI approved bulls. All AI-bulls have to meet minimum performance standards, they are approved by the Breed Society’s AI - committee and two senior breed inspectors.

MACHINERY

SCIENTIFIC BREEDING POLICY
The Bonsmara breeding policy is compiled in cooperation with leading animal scientists and geneticists. Performance testing is compulsory and all animals have been weighed and full records have been kept since the early years. The breeding system, based on production recording, has resulted in improved production.

MINIMUM BREED STANDARDS
• A heifer must calve before or at the age of 39 months for the first time.
• A calving interval may not exceed 790 days.
• A cow must rear at least two of any three consecutive calves (up to weaning age).
• A cow may not wean more than two calves with an index below 90. Once a cow has weaned three calves with an index below 90, she will be culled.

BULLS
For wean and post wean
• Minimum wean index of 90
• Minimum 12 month index of 90
• Minimum 18 month index of 90
or for phases C & farm growth tests

- Minimum wean index of 90
- Minimum ADG index of 90
- Minimum corrected scrotum 305(mm)
- A lot of emphasis is placed on the functional appearance of the animal. All animals are inspected at completion of the test and all animals that fail the inspection must be slaughtered.

COMPULSORY COMPUTER VERIFICATION
The Bonsmara society relies on computers and specially developed computer programs for the following reasons:

- To computerise all its animal records.
- For the application of the minimum standards and especially to identify cows with below standard performance that are then culled.
- Verifying and approving data for sales catalogues.
- To cope with administrative work.

INSPECTION SERVICE
The success and uniqueness of the Bonsmara inspection system lies in the fact that we use our own breeders as inspectors. They in turn train young breeders (juniors), who accompany them to the farms for the most practical and hands on herd selections. Inspectors are rotated regularly. All animals are inspected at breeding age. They are visually appraised for functional efficiency together with their official production data. Animals that do not meet the performance standards are culled. All rejected bulls are slaughtered.

MARKETING

SALES UNDER AUSPICES OF BREED SOCIETY
Sales held under the auspices of the society are arranged by clubs and private breeders. All animals are visually screened by society inspectors and performance data in catalogues is verified by the office.

CLUBS
Clubs conduct sales, host training and information days and perform various functions in all nine provinces.

PROMOTION
The breed is constantly promoted by means of the Bonsmara Journal, brochures, pamphlets and other highly informative promotional material.

SHOWS
Bonsmara may be exhibited at shows but are not permitted to participate in any competitions. The Bonsmara has become the largest breed in South Africa without competing in shows. The elimination of competition between breeders at shows has been beneficial to relationships between breeders. Many farmers choose Bonsmara for the very reason that the breed prefers not to compete at shows.

MANPOWER

DEDICATED BREEDERS
The implementation of the Bonsmara system rests squarely on the shoulders of dedicated breeders. A fine spirit of cooperation exists in the Bonsmara Society that stems from the following:

- Common goal – in regards to red meat production. The ideal is to maintain a breed of cattle that is in step with the requirements of the commercial beef industry.
- Education – to keep abreast of developments. The educational programme to aid breeders in developing functionally efficient cattle takes the form of:
  - Bonsmara days – organized by regional clubs.
  - Inspectors’ courses to attain uniformity.
  - Annual symposiums to keep abreast of scientific developments.
  - Think tanks”with geneticists, animal scientists and veterinarians to evaluate the breed and decide on strategy.
  - Breeders forums to maintain standards and expand knowledge.

DEDICATED ADMINISTRATIVE STAFF
The society has a small, yet close knit team of dedicated office personnel, communicating with breeders and the public on a regular basis.
CONFORMATION GUIDE

Strict selection for economic traits such as fertility, milk production, growth and adaptability are still practiced. This has contributed to the reality that Bonsmara proudly succeeded in becoming the strongest and most professionally administered beef breed in South Africa. Bonsmara, the most prominent of beef breeds in South Africa, currently having the most registered beef cattle.

GENERAL DESCRIPTION

A medium framed, smooth coated, heat and tick tolerant beef breed. The Bonsmara is uniform red to brown in colour and has the typical frame of an efficient sub tropical, easy calving breed.

QUALITIES

- Good adaptability on the veld
- Good mothering ability
- Good growth under intensive and extensive conditions
- Good carcass
- Disposition (temperament)
- Crossbreeding

NORMAL PRODUCTION ENVIRONMENT

Extensive, sub tropical and higher lying temperature areas.

AVERAGE BREED PERFORMANCE

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>FEMALE</th>
<th>MALE</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth weight</td>
<td>35 kg</td>
<td>37 kg</td>
<td></td>
</tr>
<tr>
<td>Cow weight at birth</td>
<td>503 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calf birth weight: cow weight</td>
<td>7.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live calves born</td>
<td></td>
<td>97.5</td>
<td></td>
</tr>
<tr>
<td>Age at first calving</td>
<td>31 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inter-calving period</td>
<td>413 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mature weight</td>
<td>503 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>205-day corrected weight</td>
<td>215 kg</td>
<td>227 kg</td>
<td></td>
</tr>
<tr>
<td>Cow weight at weaning</td>
<td>506 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calf weaning weight: cow weight</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>365 day corrected weight</td>
<td>258 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>540 day corrected weight</td>
<td>325 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
GENETIC TRENDS FOR THE BONSMARA BREED

By selecting on breeding values together with conformation Bonsmara breeders have increased important traits like weaning weight without increasing birth mass and height of animals.

CALF GROWTH VALUES

With over 3500 bulls sold yearly, with more than 88% with a growth value on average and above it is clear that Bonsmara breeders is providing bulls according to the commercial breeder’s needs.
**BONSMARA REJECTION CODES**

**Prestasie**

- **A1** Slaughter Clause
- **A2** Minimum rantstaande (index)
- **A3** Teelwaarder onder standard

**General Comformation**

- **B1** Nat Bonsmara type
- **B2** Poor constitution
- **B3** Poor balance (length/height)
- **B4** Poor balance (length/height)
- **B5** Poor body condition
- **B6** Pony type
- **B7** Big (late developed)
- **B8** Corroded body
- **B9** Fine bone
- **B10** Fine bone
- **B11** Lack of depth
- **B12** Lack of spring of rib
- **B13** Abnormale gait
- **B14** Julks

**Kleur**

- **C1** White above underline
- **C2** White above switch

**Haarkoat**

- **D1** Long or woolly hair coat

**Manlikheid/Vroulikheid**

- **E1** Oxy

**Temperament**

- **F1** Bad temperament
- **F2** Thick (difficult to handle)

**kop**

- **G1** Skeew face
- **G2** Light jaw
- **G3** Undercut jaw
- **G4** Overcut jaw
- **G5** Compressed head
- **G6** Poor eyebrow
- **G7** Narrow head
- **G8** Dish face

**voorkwart**

- **H1** Prominent braket (beak)
- **H2** Loosely attached shoulders

**Middelstuk/"Mid-piece"**

- **I1** Holfuck
- **I2** Skeew of woon
- **I3** Baggeback
- **I4** Jiqu
digrip
- **I5** Raar en shoulders

**Achterkwart**

- **J1** Prik kleur
- **J2** Oor en stockade
- **J3** Narrow through pin bones
- **J4** Excessively roundshaped (swal)
- **J5** Flat through thighs

- **K1** Rump too flat
- **K2** Excessively slabbing rump
- **K3** Rump too roafl
- **K4** Narrow through pin bones
- **K5** Excessively round shaped (swal)
- **K6** Flat through thighs

**Voerleent**

- **M1** Straight legs
- **M2** Excessively sickle back
- **M3** Excessively cow back
- **M4** Short gait
- **M5** Bands leggy

**Kootgeheur**

- **N1** Korte trap deuvel
- **N2** Upright patters
- **N3** Twisted patters
- **N4** Missing dew claws

**Kloue**

- **P1** Outgrowing hooves
- **P2** Hooves cutting inwards
- **P3** Hooves too open (wale sheel)
- **P4** Lack in depth of heel
- **P5** Hooves differ in size
- **P6** Corn screw hooves
- **P7** Standing on outside part of hind hooves

**Stert**

- **Q1** Krystal attached off centre
- **Q2** Walsi tail
- **Q3** Congenital walsi in upper third of tail

**Skrotum & Testes**

- **R1** Skrotum twisted (+49)
- **R2** Testes (spermato) too small
- **R3** Testes too big
- **R4** Koelister shaped testes
- **R5** Hypoplasia
- **R6** Kryptochidism

**Opmerking**

Gebruik W1 so min moontlik.

**Remarks**

Use W1 as little as possible.
INTRODUCTION

If you have only started to breed beef cattle, you might have found breeding values overwhelming. Some breeds receive up to 18 breeding values. What do they mean, and are some more important than others? Selecting animals on breeding values are in fact quite easy, once you know how. The key is to do your homework before you select animals.

SOME THINGS YOU NEED TO KNOW ABOUT GENETICS:

There is a saying: ‘Good feeding can hide bad breeding’, which is very true. You cannot eyeball an animal and decide what his genetics are. If he has been fed well, he will look good, but he can be genetically inferior. This implies that he – and his progeny – will need a lot of food and care to look good. It therefore makes more sense to buy an animal that is genetically superior, as it will be more profitable. Its superiority will also be transmitted to its progeny. The general idea is to rather breed animals that are suitable for your environment, not to continually change the environment to suit the animal, as this can be a very costly exercise. Using adapted animals is also the right thing to do from an animal welfare point of view.

The reason why we need to look at breeding values to know how the bull will breed is because the effect of the environment, and feed, is so important. The only way to ‘get the environment out’ is the scientific way, which entails performance measurements under controlled circumstances and complete pedigree recording. If you don’t do performance measuring properly, your animals will not get usable breeding values. So if you buy stud animals, it should be from a breeder that does performance measurement on his animals, and knows and understands breeding values.

Another important factor is that genetic change is a long term venture: The effect of the bulls that you buy today, will still be felt in the herd for years to come. If he is a good choice, his daughters will become your herd cows, and part of your profit, of the future. So don’t buy a lucky packet bull: one you don’t know anything about, but you are hoping for the best. Even if the bull you buy is not perfect, if you know about his shortcomings, you can manage it by using him on suitable cows.

BREEDING VALUES

Breeding values are also expressed as indexes, which is very easy to interpret and use. The average breeding value index of live animals in the breed is set to 100. So above 100 means the animal is better than breed average. A value of for example 120 for weaning weight means a calf that has the genetic potential of 20% heavier than the average calf. Breeding value indexes indicate genetic potential, and how heavy it will actually be, is determined by the amount of feed it gets. However, it you have two calves, one with an index of 120 and another with an index of 80 together on the same farm, the 120 one will definitely be the heaviest. A lower birth weight is generally more desirable, as birth weight is the most important cause of difficult births. So an index for birth weight of above 100 indicates a lighter calf.

Note that although above 100 indicates the more desirable direction, it does not imply that all breeding value indexes should be maximum. For some traits, e.g. birth weight and mature weight, average is in fact the most desirable.
Another fact that should be kept in mind, is that traits are connected to one another, meaning you should not select on one trait only. Selecting only for maximum weaning weight for example, will increase both birth weight, which will cause difficult births, and mature weight, causing large framed cows that can be inefficient under certain circumstances.

In Table 1 the information of 6 bulls in a sales catalogue is shown. The Breeding Value Indexes of the bulls (for example Row A) and the accuracy of the breeding value (row C) is used in the selection of bulls. The accuracy indicates the amount of information available for breeding value estimation. If it is above 80%, the breeding value is based on lots of information, while below 30% it is not very reliable, and may change a lot as new information is used for breeding value estimation. Row B can also be used, but it indicates breeding values, which is not as easy to interpret as the breeding value indexes. The information in row D only indicates if the animal was measured for a specific trait. It cannot be used for any selection whatsoever, as it reflects mainly the environmental effect and not the genetic effect.

**HOW TO USE BREEDING VALUES**

If for example you want to buy a breeding bull on breeding values, you need to follow a few simple steps. The first and most important is to know what you want. What you want is mainly determined by three factors: What do you want to do with the bull’s calves, how much feed do you have and what is the genetics of your cows.

What do you want to do with the calves? For example, you can sell some of the calves as weaners to a feedlot, or you can breed replacement cows for your older cows that are leaving the herd. If you intend to sell stud bulls, you should realize that it is a very specialized area, and you need to study performance measurement and breeding values in depth. Only the best bulls should become stud bulls. Having said that, as we will see, not all bulls need to be the same to be best.

How much feed do you have? The amount of feed determines the frame size that will

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**TABLE 1 | EXAMPLE OF 6 BONSMARA BULLS FOR SALE IN A SALES CATALOGUE**

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How much feed do you have? The amount of feed determines the frame size that will
too low. (A low birth weight index indicates a heavy calf at birth, which is undesirable). Bull 4’s birth weight and weaning weight is much better than Bull 3’s.

Bull 2: A bull to use on Bonsmara pedigree cows that do not have any particular problems. They will be on the veld all year. The heifer calves will be used as replacement cows in the herd, or sold as such, while the bull calves out of the superior cows will be sold as stud bulls. A bull with average or slightly above average growth will be ideal. Once again the growth breeding values are important, but should not be as high as possible, but closer to 100. It is now important to also look at Birth Weight and Milk as well as the reproduction breeding value indexes AFC (Age at first calving) and ICP (inter-calving period). The Cow Value, which combines all the important breeding values into one value, will give a quick indication of how suitable the animal is to breed cows. (AFC, ICP and the Cow Value are not on the sales catalogue, only in the genetic evaluation report that all stud breeders receive once a year). From Table 1, both Bulls 5 and 6 will be suitable, although Bull 6 will be the better choice, since birth weight, weaning weight and mature weight is a very favourable 102, 109, 90, indicating a curve bender, against Bull 5’s 97, 100, 105 indicating a little bit too heavy at birth in relation to average at weaning and above average at maturity.

Bull 3: A bull to use on heifers that are to be mated to calve at 2 years. The bull should therefore not have a high breeding value for birth weight, so as to ensure easy calving. The calves should however still be profitable, i.e. have enough growth in them to be either sold to the feedlot or to be used as replacement heifers. A bull with Breeding Value Indexes for both Birth Weight and Weaning Weight above 100 is ideal. In Table 1, for example, the best bull when selecting only on the best value on Birth weight, would be Bull 2, but he breeds small calves with little growth. Bull 6 will be a much better choice: although birth weight index is above average (smaller), weaning weight is also above average (heavier), and this calf can be retained in the herd or sold.

**IN CONCLUSION**

As can be seen from the above, different types of bulls are suitable for different types of cows and circumstances. It is also possible to find a custom bull to your cows, with the aim to improve the calves. As inbreeding should also be kept at a minimum, it is usually easier to use a mating program to fit bulls to cows based on breeding values.
PRACTICAL BULL MANAGEMENT

Your bulls are the most important animals on your cattle farm, making up only 3-4% of your herd but contributing 50% to every calf they produce. A single bull can produce 40 or more calves per year.

THE NEW BULL ON YOUR FARM

• If the new bull is transported with foreign bulls, it would be ideal not to load them into the same compartment on the truck, particularly if free standing. They can get into nasty fights on the truck and lesser bulls cannot escape from the fighters. Therefore, preferably load foreign bulls in separate compartments (even bulls that know one another).

• Make sure that the bull (particularly if it is the only one) is off-loaded in a safe camp (with sturdy fencing) with one or two other cattle to keep him company for the first few days. Clean water and good grazing will immediately calm him. Make sure he finds the water and leave him in peace for at least two days.

• You can take out limited or comprehensive insurance cover and/or you can collect the bull’s semen if it is genetically superior. If you introduce bulls from a disease-free area to an area with endemic diseases, such as heart-water, red-water, gall-sickness etc., rather insure the bull comprehensively for a year.

• Incorporate the bull into your normal dipping, dosing and vaccination programme immediately, independently of what the previous owner did.

• If the bull is very fat, wean him of concentrated feeds systematically. In the first week 8 kg/day; the second week 4 kg/day; the third week 1 kg/day, along with his future lick (ad lib); and the fourth week only his normal lick.

• If possible, keep the new bull away from other bulls until he gets to his cows. In other words, the bull should work for a season before being put in with the greater bull herd.

• Remember that a bull cuts teeth between 2 and 2½ years. The bull might possibly lose weight if he has to adjust to his new environment, browse in average grazing and service cows.

• Ideally you should have the bull on your farm two months or more prior to the start of the breeding season to allow him to adjust to his new environment and feed conditions.

BEFORE THE MATING SEASON

• It is essential to have your bulls tested for fertility three to six weeks before the onset of the mating season and perform sheath wash for Trichomoniasis and Campylobacter (vibriosis).
Of 10,940 bulls tested in the USA approximately 20% were unfit for use. You would normally ‘lose’ at least 10% of your bulls. Identify them before the breeding season; the costs involved are much lower than the calves you lose for not doing so. Test your ‘new’ bull too, even though he might have been sold with a fertility certificate. The effect of stress of the auction and transportation may affect his fertility in the short term.

- Even in systems that use multiple sire mating, it is essential to perform a semen evaluation of the bulls, as dominant bulls with poor semen can keep younger bulls with good quality semen away from cows.
- Examine your bulls for general health before the mating season; make sure that they are structurally normal and that their gait is in no way awkward or abnormal.
- Inject bulls about two months before the breeding season with Vitamin A and minerals (Multimin + SE + Cu). Embamin and Embavit (dosed orally) are brand names of oral supplements that can also be used. This treatment may be repeated after about two months.
- A bull's condition should always be 2½ to 3½ out of 5. Overfeeding causes heavy, unfit, clumsy bulls, whose semen is usually sub-standard.
- Underfeeding may also be a problem, but normally libido decreases before semen quality is affected. If bulls are somewhat lean, start providing supplementary feeds two months before the breeding season. These may vary from production lick to 5-10 kg concentrate per bull per day.
- Vaccinate bulls against Crotalism (stiff-sickness) and (Complobacter foetus) vibriosis, two months prior to the breeding season.

**DURING THE MATING SEASON**

- It is important to carefully observe your bulls, particularly young bulls. Make sure that such bulls are adept at mating and that libido is present. Young bulls are initially inexperienced, but should be adept within a few days. Usually 10% of bulls have no or weak libido. Identify and eliminate them.
- In multiple sire herds, put older and younger bulls together – not bulls of equal strength. No fewer than 3-4 bulls per 100 cows. We believe in using one adult bull and two young bulls per 75 cows. In single mating herds 30 to 40 cows should be allocated per bull for three months.
- Should a bull have a feverish reaction as a result of red-water, gall-sickness, lumpy-skin disease, three-day stiff-sickness, etc., his semen would probably be infertile and he might need two months (or even longer) to recover. During the mating season closely observe the bulls to identify diseased ones immediately. Replace such a bull. Foot-rot must be treated right away by injecting long-term antibiotics. It is a painful condition and bulls will not breed until it has been cured. Make sure that your bulls remain healthy during the breeding season. Injuries that result from fighting or other causes can eliminate a bull from the breeding season, particularly hip, leg and hoof injuries.
- Keep a record of the cows that were serviced. Approximately 60% of cows are fertilised in their first cycle. If more cows return to oestrus there is a problem; it must be identified and solved as soon as possible. You have time to do so, but you need to hurry.
- Mating herds should not be kept alongside one another. Bulls fight through the fences to get to a cow on heat. With two-year old and younger bulls you might risk it with a very sturdy fence.

**AFTER THE MATING SEASON**

- Starve the bulls in separate, sturdy kraals for three to four days (without food and water). Then take them out to the ‘bull camp’ one by one, where good grazing and clean water is freely available. Under these conditions they should forget all about the cows and need to feed more than fight! The bull camp must be safe, without too many stones, ditches or holes, and there must be enough space to make way for one another.
- The ideal is to pair bulls off (one older and one younger) and not put them all together in one camp. Valuable bulls in particular should be kept separately. However, in practice they are lumped together between mating seasons and the owner can then only hope for as few injuries as possible.
- The bull camp can be secured by erecting double fences (3 metres apart) along the sides where other cattle are grazing. Electrical fences may be useful but require maintenance.
- Because bulls frequently fight and need more ‘personal’ space, make provision for more eating space at lick troughs or when limited supplements are fed. Between 0.5 and
1 meter per bull ought to be sufficient. Truck or tractor tyres turned inside out make effective troughs for licks; they are indestructible and cannot harm the bulls in a fight.

- When working with the bull herd, make sure that they are not all driven into a tight group (pinned together); they usually fight under such circumstances. Bulls that have accepted one another for months will suddenly start fighting if they are moved around – the scientific term is ‘translation behaviour’.
- Do not allow all the bulls to graze with the milking cows or another cow. All bulls mating with the same cow might lead to cross-infection with venereal diseases.

**GENERAL REMARKS**

- It is advisable to have one reserve bull for every ten bulls you are using.
- Bonsmara bulls can already be used at 14 months of age as long as they weigh 420 kg, the scrotal circumference is at least 340 mm and their semen has been tested. These young bulls ought to be able to service 10-20 cows each in three months.
- Normally Bonsmara bulls can be used up to an age of ten years. Older bulls can also be used, but under special observation to see if they are still breeding well.
- Adult Bonsmara bulls weigh between 800 and 1000 kg; in other words, at least 1.5 to 2 LSU (Large stock units). Bear this in mind with your bull camp and fodder flow planning.
- Enjoy your bulls; in 90% of cases you should have no problems.

**A BONSMARA BULL IS ...**

- Registered with SA Studbook
- Performance-tested by SA Studbook
- Approved by Bonsmara inspectors
- Branded with a [33] on the right shoulder

**GENOMIC BREEDING VALUES FOR BONSMARA**

The release of the very first Genomic BLUP breeding values for beef cattle in Africa enables Bonsmara breeders and their global clients to share in the advantages of the latest breeding technology for livestock.

The Bonsmara breed has taken the lead to make Genomic Selection for the breed in Africa, and even globally, a reality when Bonsmara SA, at their annual general meeting, in 2012 decided to invest in genomic selection. This investment in the future of the breed was made by gaining access to the genomic profiles of influential breeding animals to establish a reference population. The initial investment was made from own funds and contributions from fellow breeders. The animal scientists at Stud Book worked closely with the Bonsmara Council in taking the lead in planning and executing the project and following scientific principles needed to make genomic information part of breeding value predictions for the breed.
THE BONSMARA SYSTEM IS THE IDEAL FOUNDATION TO APPLY GENOMIC SELECTION

Bonsmara breeders take part in a system where traits of economic importance are routinely measured and recorded. This is a prerequisite for successful breeding value predictions, including the incorporation of genomic information. The establishment of a reference population was accelerated when the Beef Genomics Program (BGP), financed by the Technology Innovation Agency (TIA), was established in April 2015.

Due to the commitment of the Bonsmara breeders to record diligently, the breed’s main focus in the BGP is to add as many as possible influential breeding animals to the reference population. A main focus is also to include the genomic profiles of females with a large influence in the breed. This has the advantage that sex limited traits, only measurable on females could be linked more accurately to the genomic differences among animals in the breed. The chosen cows already had very accurate BLUP breeding value predictions for these traits. They include traits such as age at first calving, calving interval and maternal influences on birth and weaning weights. Due to the enthusiastic participation of Bonsmara breeders in central and farm growth tests for young bulls, trustworthy information is also available for traits such as feed intake and those associated with Real Time Ultrasound scanning (subcutaneous fat depth, eye muscle area and marbling). To avoid weak links between some genetic groups or herds with the information on genomic profiles for the breed, all breeders were encouraged to submit biological samples (semen straws or hair samples) of their herd sires to be included in the reference population.

While the collection of hair samples and semen from influential animals took place and the genomic profiles became available, the animal scientists at SA Stud Book continued with the model development, evaluation of the available computer software and evaluating test evaluations where genomic information was included in the BLUP evaluations. The rapid scientific and technological developments also made it possible to consider the implementation of the so called, “Single Step” method in the genomically enhanced BLUP breeding value predictions. This method has more advantages and can form part of the routine BLUP evaluations for the breed that currently takes place once a month. Effectively each animal receives a Genomic Breeding Value that is an adaptation from the expected BLUP breeding value for such an animal based on its true relationship with all other animals, with genomic profiles, in the population. The true relationship between animals with genomic profiles is therefore known. The obvious advantage is that it will be known what gene combination a young animal received from its parents, given that the genomic information is known. Does this animal take after the better parental line or not? The accuracy of the BLUP breeding value for young animals, especially those without measurements yet, is therefore enhanced, compared to those without genomic profiles. This is especially of value for traits or properties that can only be measured on one of the two sexes, like the genetic merit of cows to restrict the birth weight of their calves, to wean heavier calves, to calve early in season as a heifer and subsequently each calving season as can be determined by breeding values for calving ease, milk, pre-wean growth, age at first calving and calving interval. Traits that are traditionally only recorded on bulls, like feed intake (and the efficiency of converting it into growth) and traits associated with scanning like eye muscle area and marbling gain a lot through the inclusion of genomic information in the BLUP breeding value predictions.

The Bonsmara Breeders’ Society of South Africa and SA Stud Book are therefore proud to announce the availability of the first Genomic BLUP breeding values for the breed from 1 July 2017. This is also now part of the regular routine monthly genetic evaluation. This service enables breeders to test young animals genomically to enhance the accuracy of BLUP breeding values for those animals. This reduces the risk associated with decisions in selecting young animals that will impact on the genetic merit of herds in future. Young bulls are excellent candidates to include in these programs, especially if they are considered as future herd sires and AI bulls.

Animals with known genotypes included in the BLUP evaluations will be identified by the “GenoTyped” logo. Searches for Bonsmaras on www.SABeefBulls.com can also be conducted on the genotyped status of animals.
The minimum breed standards contained herein replace all previous breed standards and become effective immediately.

The Council shall draw up minimum breed standards for inspection purposes (Clause 9.29 of the Constitution).

The Council may direct the Manager to reject or to cancel the recording or registration of an animal that does not comply with the following set minimum standards:

1. **REPRODUCTION**
   1.1 A heifer must calve before or at the age of 39 months for the first time;
   1.2 A calving interval may not exceed 26 months (790 days);
   1.3 The minimum number of calves a cow must produce by a certain age is noted in the table below:

<table>
<thead>
<tr>
<th>Age of dam</th>
<th>Min. No. Calves</th>
<th>Max. ICP (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 years 3 months</td>
<td>4</td>
<td>628</td>
</tr>
<tr>
<td>9 years 3 months</td>
<td>5</td>
<td>563</td>
</tr>
<tr>
<td>11 years 3 months</td>
<td>6</td>
<td>596</td>
</tr>
<tr>
<td>12 years 3 months</td>
<td>7</td>
<td>558</td>
</tr>
<tr>
<td>14 years 3 months</td>
<td>8</td>
<td>582</td>
</tr>
<tr>
<td>15 years 3 months</td>
<td>9</td>
<td>555</td>
</tr>
<tr>
<td>17 years 3 months</td>
<td>10</td>
<td>575</td>
</tr>
</tbody>
</table>

1.4 A cow must rear at least two of any three consecutive calves (up to weaning age).

2. **MILK PRODUCTION**
   2.1 A cow may wean not more than two calves with an index below 90. Once a cow has weaned three (3) calves with an index below 90 she will be culled.

3. **GROWTH**
   3.1 **GENERAL**

   “THE ENTIRE REMAINING GROUP MUST BE INSPECTED TOGETHER”.

   Indices will be required for the purpose of inspection.

   **NOTE** | The wean index is compulsory for all groups and for individual animals unless a valid reason is given.

   In such cases the year and 18 month indices must be presented.

3.2 **HEIFERS**
   a. Minimum wean index of 90
   b. Minimum 12 month index of 90
   c. Minimum 18 month index of 90

   • In cases where heifers are inspected before the age of 18 months the wean and 12 month indices will suffice.

   • In cases where the animal could not be weighed at the age of 12 months, the wean and 18 month indices will be acceptable.

3.3 **BULLS**
   3.3.1 Post wean growth test (phase B)
   a. Minimum weight of 375 kg at time of inspection.
   b. Minimum wean index of 90
   c. Minimum 12 month index of 90
   d. Minimum 18 month index of 90

   **NOTE** | The scrotum circumference of phase B bulls is not officially measured.

   The inspector may measure the scrotum circumference and use the standards below as guidelines.

   (A Breeder may measure bull scrotums at 18 months of age and send measurements together with 18 month old weights to STUDBOOK.)

   **Minimum scrotum circumference.**

<table>
<thead>
<tr>
<th>Weight</th>
<th>Scrotum circumference</th>
</tr>
</thead>
<tbody>
<tr>
<td>375 to 399 kg</td>
<td>30 cm</td>
</tr>
<tr>
<td>400 to 449 kg</td>
<td>31 cm</td>
</tr>
<tr>
<td>450 to 499 kg</td>
<td>32 cm</td>
</tr>
<tr>
<td>500 to 549 kg</td>
<td>33 cm</td>
</tr>
<tr>
<td>550 kg and over</td>
<td>35 cm</td>
</tr>
</tbody>
</table>

3.3.2 Central + Farm growth tests (C+D)
   a. Minimum wean index of 90
   b. Minimum ADG index of 90
   c. Minimum feed conversion ratio index of 90 (Phase C only)

3.3.3 All rejected bulls from Growth tests as well as bulls not submitted for inspection, must be castrated or slaughtered immediately.

4. **VISUAL APPRAISAL**
   4.1 The emphasis is on the functional appearance of the animal. The inspector will determine whether the defect warrants culling the animal. Animals with congenital defects must be culled.

   Refer to the attached Codes for Rejection reasons.

4.2 **TYPE AND COLOUR**
   4.2.1 **BASIC ANIMALS**

   A variety of crossbred animals phe-notypically representative of a Bonsmara-type will be acceptable.

   Different shades of red with minimum white, is acceptable.

4.2.2 **APPENDIX AND HERD BOOK PROPER ANIMALS**

   Animals must be red and neatly dehorned. White will be acceptable on the underline only.

5. **BULLS FOR ARTIFICIAL INSEMINATION**

   The Society will control the practice of AI in Bonsmara herds in accordance with the “Livestock Improvement Act of 1998” as amended.
5.1 PROCEDURE FOR APPLICATION

5.1.1 BULLS LICENCED FOR THE PURPOSE OF A.I.
Nominated bulls, with acceptable genetic potential will be researched by a committee appointed by the Council in respect of:

- Own performance
- Ancestral performance
- General appearance
- Progeny performance where applicable

5.1.2 Evaluation procedure for A.I. Bulls

**STEP 1** | Breeder Identification of potential A.I. bull
- Application for registration to office

**STEP 2** | Office Collates necessary information
- Information forwarded to Technical Work Group Chairman

**STEP 3** | Office Appointment of Selectors
- Furnish Selector with necessary performance data and breeding values.

**STEP 4** | Selector Visual inspection of bull on the farm
- Discuss differences/recommendations with breeder.

**STEP 5** | Office Advise breeder if process may continue.

**STEP 6** | Breeder A.I. Centre/Vet/Technician compiles reproduction report.

**STEP 7** | Centre Reproduction report is forwarded to office.

**STEP 8** | Office Technical Committee evaluate result of report.

**STEP 9** | Office Approval as A.I. bull by Committee.

**STEP 10** | Office Approval is confirmed with A.I. Centre.

**STEP 11** | Centre Bull may then be tapped.

5.2 PROGENY

The Breed Society may cancel the registration of an A.I. bull if the performance of the progeny is not satisfactory.

6. EMBRYO TRANSFERS (ET)

The Breed Society will control embryo transfers in accordance with the “Livestock Improvement Act of 1998” as amended.

Contact the Bonsmara Office for more information on application procedures, rules and written consents.

7. EXCEPTIONS

7.1 With written motivation on the inspection form animals that do not meet the requirements of Minimum Breed Standards may in exceptional cases be approved by the inspector.

7.2 Written application (appeal) to the Council within 7 days after inspection.

7.3 In spite of index an animal may be approved in spite of index if the animal scores a visual point of 8 with an index (wean or ADG) not less than 88.
HOW TO BECOME A MEMBER OF THE BREED SOCIETY

• Application forms are obtainable from the society.
• Performance Testing is a prerequisite for membership to the Bonsmara Breeders Society.
• 20 Bonsmara type females are required for the initial herd.

Application must be made for the inspection if any unapproved basic animals are involved.

Completed applications for membership should be sent to the Bonsmara offices together with:

• A map indicating the way from the nearest main road to the farm and stating distances between places.
• Six short names for the registration of the herd prefix and a choice of three herd designation marks of three letters each.
• The required fees.

More information regarding the Bonsmara breed or membership is available upon request.

The Bonsmara Society is proud of the exceptional service they provide to their members as well as the industry.

For more information on Bonsmara or how to become a member of the society, please contact us:

T: 051 448 6084 | F: 051 448 6327
E-mail: info@bonsmara.co.za | www.bonsmara.co.za

The office of Bonsmara SA is based in the S.A. Stud Book Building.
118 Henry Street | Bloemfontein | PO Box 12051 | Brandhof 9324
For more information on Bonsmara, it’s breeders’ and event dates, please visit:

www.bonsmara.co.za

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