Boran

Breed characteristics and crossbreeding

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The most exciting future for Boran cattle in Africa is the enormous potential of the breed in crossbreeding programmes. This potential is due to the unique characteristics of the breed. These characteristics have developed as a result of a natural selection process under harsh African conditions for over a thousand years. Modern commercial beef farmers should use these characteristics to their advantage in crossbreeding programmes.

The following is a combined documentation of literature reports, scientific research trials and personal observations over a twenty-year period.

Unique breed characteristics

Genetic make-up
The Boran has a unique genetic makeup and is a pure breed. They also have much stronger hybrid vigour than modern compound-breeds in crossbreeding programmes.

Tick and disease resistance
Field studies have shown that grazing Borans have lower tick counts than other breeds grazing under the same conditions. This includes other indigenous African breeds such as the Nguni and Tuli.

Ticks and flying insects (biting flies, buffalo flies, Culicoidesspp or midges, house flies and mosquitoes) transmit diseases and cause mechanical irritation, resulting in loss in production. The smooth hair coat and motile, sensitive skin of the Boran protects it against tick and insect infestation. The short-hair coat is unfavourable for ticks and insects trying to attach prior to biting the skin.

The skin of the Boran is very sensitive to the lightest touch. The subcutaneous muscle is thick and well developed, which controls the ability of the skin to shake when a tick or fly lands. The tail of the Boran is active in deterring insects, and modern Boran breeders select for long, thick tails with well-developed brushes. The Boran skin produces a waxy secretion which is a deterrent for biting external parasites.

The long eyelashes, well-developed eye banks, and dark pigmentation (eyes and points) protect against pink-eye and skin cancer from sunburn. Boran cattle show minimal clinical signs from foot-and-mouth disease and recover faster after infection than exotic breeds. There is an inherent resistance to East Coast fever and a documented degree of tolerance to trypanosomes (sleeping sickness) most likely conferred by the African Bos taurus genetic component.

Heat tolerance
These characteristics are a result of the Bos indicus component of the Boran. The Boran's short, glossy coat reflects sunlight, resulting in a high heat tolerance. The skin has a large number of well-developed sweat glands. The skin surface area for body heat dissipation is increased dramatically by extra skin folds, especially the dewlap.

The metabolic rate of Bos indicus breeds has been shown to be lower than that of Bos Taurus breeds, thus resulting in less metabolic heat to be dissipated from the body (D. Roberts & V. Finch, Nairobi 1973). As a result of this high heat tolerance, Boran cattle continue to graze in the heat of the day. This is especially noticeable in herds which are kraaled at night (to protect against stock theft or predation). This is a remarkable breed ability to compensate for “lost” grazing time.

A Boran’s glossy, smooth coat and large skin surface area help with high heat tolerance. Borans also have well-pigmented eyes and strong eye banks to protect them against eye infections and cancer.

Feed requirements, drought resistance and fertility
The Boran has adapted to survive in harsh tropical nutritional conditions as a result of its small body size. Experienced modern cattle breeders have for many decades recorded that Borans on their farms have low feed maintenance requirements. This was substantiated in a study reported at the US Meat Animal Research Centre in Nebraska (Haile-Mariam, Sprinkle et al. 1998).

The Boran is able to digest low-quality feeds. Roughages deemed unsuitable as feed for other breeds will be readily consumed and utilised by Borans (personal observations). Boran cows are efficient converters of roughage into body fat deposits, which are later mobilised during periods of feed scarcity and lactation.
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Boran tend to have a high body capacity (wide and deep) in relationship to their body mass. This allows for a well-developed rumen with an efficient roughage digestive system. Boran cattle are excellent browsers and have been noted to selectively browse small leaves on thorn trees (Acacia) and leaves with high tannin content (personal observations).

The above traits result in a high breed drought tolerance.

The Boran is noted for its high fertility. This is especially evident under adverse nutritional conditions. Young Borans have an extraordinary ability for compensatory growth when more favourable conditions replace adverse conditions.

Social behaviour

The social behaviour of Boran cattle is unique. Their strong herding instincts have developed as a result of a necessity to survive predators. A herd of Borans will graze together, water together and rest together. At nightfall they spontaneously stop grazing in early evening and lie close to each other. When alarmed, they bunch together in a protective manner, rather than fleeing as individuals.

This social behaviour is also seen in Boran crossbreds, confirming that it has a largely genetic component. The herding instinct has advantages in a modern beef operation. Cattle theft of individual animals is more difficult, herding is easy and cattle handling is labour-saving. In addition, Borans can be managed easily in large herds.

Personal observations are that –

- bulls often herd their groups of females
- social bonds form (often as calves) and these friendships are lifelong
- females are protective of each other’s calves
- cross-suckling is common and orphan calves are readily adopted by other cows, and
- calves often form nursery groups with one or several protective older cows in charge while the rest of the herd moves off to graze. If danger threatens the guardian cow gives an alarm “whistle” to alert the rest of the cow herd.

Borans bond readily with humans and other species. This bonding is especially noticeable in cattle which are herded.

The Boran is well known for its docile temperament. Boran cows with calves at foot are excellent mothers; they are extremely protective, and seldom reject or lose their calves, even when walked long distances to be kraaled at night.

The calves are small at birth (average 22 to 27 kg on commercial ranches). There is a very low incidence of dystocia (difficult births), even when carrying crossbred calves sired by larger breeds. The calves are strong and able to walk long distances soon after birth. Boran cows are good milkers with a high butter fat percentage. A Boran weaner is usually above 45% of its dam’s weight, and often 50% or more.

The Boran cow’s udder has strong attachments and small teats, in contrast to some Zebu breeds. Bottle teats are a rare problem.

Bull sheaths

Boran bulls have functionally efficient sheaths and sheath problems seldom occur. The sheath is angled forwards rather than downwards and the sheath opening has a strong perpetual sphincter which closes it. This prevents the sheath from prolapsing and stops grass seeds and thorns from entering the sheath.

The perpetual muscle around the sheath pulls it up against the bull’s body. The navel skin gives additional protection to the sheath.
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opening when the sheath is lifted. The perpetual sphincter and muscle contract when the bull walks through long grass.

Other traits
Borans are adapted to tolerate periodic shortages of feed and water. They are functionally efficient, with sound feet and legs enabling them to walk long distances to feed and water on a daily basis.

The polled gene is prevalent in many Boran herds, but the interplay of polled genes seems to be complex with various degrees of polled influence seen phenotypically (personal observations). Certain other phenotypic traits are associated with the polled gene, including bone structure, skin looseness and eye bank.

Mortality, longevity, adaptability and crossbreeding
The above genetic, physical and social attributes have developed over 1 300 years as a result of survival of the fittest. The end result is a breed with low mortalities compared to those of other cattle breeds, and longevity.

Cows over 15 years are often sound mouthed and rear healthy calves at regular intercalving intervals. Bulls over ten years are often in prime working condition. This results in low replacement rates, and the ability to grow a herd more quickly than other breeds.

Beef production and carcass traits
The European Bos taurus genetic component of the breed is responsible for improved beef characteristics compared to other Bos indicus and African breeds. These include general width and improved muscling.

Borans are efficient feed converters, making them attractive for beef feedlot breeding programmes. Trials in Kenya in 1974 showed that Boran crossbreds performed better than pure Borans on high concentrate diets, but had no performance advantage on lower concentrate rations. Trials in Nebraska, USA, show that the Boran and its crosses score consistently better than other Zebu breeds for meat tenderness, carcass marbling and rib eye area.

Boran crossbreeding
The breed has been distributed over the last 60 years to many countries in East, Central and Southern Africa where it has shown remarkable adaptability to a wide range of environmental conditions, and outperforms local indigenous breeds. It is thus ideal for crossbreeding.

As in all breeds, there is great variation within the breed. Specific types will be better suited to certain environments. This must be taken into consideration with selection of bulls for crossbreeding purposes.

All dairy and beef breeds are suitable for crossbreeding with the Boran. The genetic composition of the Boran makes a two-way cross ideal. Remarkable results have been seen in commercial and small-scale dairy herds which cross-breed with Borans.

Crossing Borans with Jerseys or Holsteins produces easily manageable dairy cows with high milk production, heat tolerance, lower maintenance costs and good fertility. The Boran is early maturing compared with other Bos indicus breeds, making it highly suitable for beef crossbreeding. All the breed characteristics summarised above, with maximal hybrid vigour, are seen in beef crossbreeding programmes with Brahman, Simmentalers, Sussex, Charolais, Nguni, Bonsmara and Santa Gertrudis to name but a few.

Studies done in Australia (1996) and the USA (1995) have shown that Boran bulls on F1 cross es resulted in –

• the highest percentage of calves born
• the lowest mortality to weaning
• the highest weaning weight in relation per 100 kg cow bull, and
• the net result of highest beef production per hectare.

A 17-year-old Boran cow and calf – Borans are renowned for their longevity.

Benodig u’n Boran?

“God’s gift to cattlemen”
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