CHULU BORAN – a top Zambian herd

Sally and Craig Shiel tell **Wilma den Hartigh** the story behind the development of their herd, and why this breed's unique characteristics are ideal for drought-prone areas of Africa.

Sally and Craig Shiel, owners of Chulu Boran in Zambia, developed their herd from the renowned Zambian Grasmere herd. The original animals were imported from Kenya in the 1950s and the Chulu herd has become Zambia's largest registered and most genetically diverse Boran herd.

The herd was built up over decades to what it is today. The strong Grasmere-Chulu genetic lines are predominant, reinforced and developed by semen, embryos and live animals imported from Kenya, Tanzania and South Africa.

The Shiels started farming in the 1970s in Chingola in the Zambian Copperbelt. Years later they expanded to Mkushi in the Central Province, where they established a quarantine centre. This has since been approved for imports and exports by the state veterinary services of Zambia, Namibia and South Africa.

The couple have been actively involved in the development and management of their own herd as well as that of the Boran breed in general for more than 30 years. In the 1980s, they also ran Simmentaler and Brahman cattle, but favoured the Boran for its resilience.

"Borans are much more productive and perform where other breeds won't," Craig explains. "They're adaptable to harsh farming conditions in Africa."

From 2008 to 2012, the Shiels exported embryos to Namibia and South Africa with the intention of establishing a pool of Chulu Boran genetics outside Zambia. Craig and Sally now work with partners Chulu Borans Namibia and Chulu Borans South Africa.

BELOW: The Chulu Boran herd was developed from the well-known Zambian Grasmere herd. PHOTOS: SALLY AND CRAIG SHIEL

BREEDING AND SELECTION

Chulu Boran's breeding emphasises fertility and function balanced with structural soundness. The result is a uniform herd of medium-framed Zambian Borans adapted to the sometimes harsh conditions of central Africa.

The operation's own embryo transfer programme has played a central role in the development of the herd. This programme

is managed by Sally, who is a vet.

"We support the principle of fast-tracking genetic improvement," she says. "In 2007, we recognised that we had a great nucleus of genetically superior females, but we wanted the numbers. Growth by natural breeding was just too slow."

In 2008 and 2009, the Shiels launched a large-scale embryo transfer programme.

"We flushed our nucleus herd of superior females and used every single available recipient," she recalls.

Recipients were prepared and embryos implanted. Those that did not take on the first round of transfers were implanted a second time in the same season before being put to the bull. The result was a crop of 100 supreme Boran embryo calves born in 2009, with another 80 Boran embryo calves born in 2010.

"In just two years, we made 10 years of remarkable genetic progress," she says.

"So we did DNA profiles on our entire Boran breeding herd as well as the commercial embryo recipient herd to facilitate accurate DNA laboratory parentage testing."

All natural breeding is now done in multi-sire herds with between 100 and 200 females, with a female to bull ratio of between 25 and 30 to one, depending on the nature of the terrain and the age of the bulls. Through careful breeding planning, bulls are selected to prevent inbreeding. Subsequent DNA testing confirms the sire of each calf.

Selection is based on fertility and hardiness, as well as growth and milk production. All females are weighed at calving and weaning. All animals are weighed at birth, pre-weaning, weaning, 12 months, 18 months and 24 months. Animals that underperform according to an intra-herd performance index are moved to the commercial herd or culled.

Balanced criteria selection is important, stresses Craig, as placing too much emphasis on one criterion can push the genetic trend in the wrong direction. The Shiels also achieve great vigour by outcrossing pure genetic lines.

BORAN ADAPT THEIR BODY SIZE TO THE ENVIRONMENT

Embryo transfer and artificial insemination programmes are still conducted routinely every June and December before the winter and summer breeding seasons. The breeding programme now focuses on selective mating of the best males and females, as well as introducing selected new genetics.

"With the large herd expansion in 2008, and our future plans for large breeding groups on difficult terrain, we recognised that it would soon be impossible to run single-sire herds," Sally says.

CHARACTERISTICS

Although the Boran is sometimes criticised for being small-framed, Sally believes it is a positive characteristic.

"The Boran can maintain and adapt its body size to cope with the environment," she explains. "We've observed how the two herds of the same genetic pool we keep on the Chingola and Mkushi farms, which are 400km apart, differ in body size as a result of the type of grazing."

Both farms have sourveld vegetation consisting of grass species with very low nutritional content during the long dry season. However, the Mkushi farm has sandy soil with generally narrower-leafed grasses, while the Chingola farm has heavier soil with more palatable, thicker-leafed grasses. The heavier soils and warmer climate in Chingola results in better winter grazing in the shallow wetlands (*dambos*). The result is onset of puberty three months earlier on Chingola than on Mkushi, and a 30kg higher mature cow weight.

Although calves are generally smaller than those of other breeds, even under tough conditions, the average weight at weaning as a percentage of the dam's weight is one of the highest. Due to its smaller frame, the Boran seldom experiences calving problems, except when heifers put on too much weight during late pregnancy, which

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FROM TOP: The Boran is sometimes criticised for its smaller frame, but for the Shiels this is a positive characteristic as it can adapt its body size to cope with the environment.

• The Shiel family (from left): Ryan, Sally, Craig and Drew.

• The Boran is one of the strongest browsing breeds, and feeds on Acacias, including the fruit, seeds and pods.

causes a uterine inertia as a result of fatty deposits in the abdomen and pelvic organs.

Sally says that the Boran is the ideal breed for their environmental conditions because of its resistance to disease.

"*Bos taurus* breeds and crossbreeds carry a far higher tick burden," she explains. "We lose more animals to snake bite and lightning than to anything else."

DROUGHT RESISTANCE

On both farms, the Shiels have noticed that Boran cattle are among the few breeds that can handle inferior quality grazing.

"They have a very good ability to produce on poor forage. This is important for us as our grazing conditions on both farms are characterised by acidic soil and sourveld vegetation," Craig explains.

Boran cattle also browse extensively, including on the leaves, fruit, seeds and pods of Acacia trees.

These unique breed characteristics make it the future breed of choice in drought-prone areas, according to the Shiels.

Sally has noticed that some farmers allow their Borans to become overweight and says this is detrimental to the animals. Cows and heifers that are over-conditioned have poor fertility and calving problems. Overfed bulls tend to have overgrown hooves, reduced libido and poor semen quality.

"We achieve the best results by keeping them lean and mean," she explains. "A cow has an incredible ability to bounce back after weaning her calf."

HERD MANAGEMENT

The Shiels have an unconventional approach to raising livestock and do not keep their animals in camps.

"Our stud herd consists of more than 500 females and we can't run this size herd on a camp structure," says Craig.

Instead, a herdsman takes the herd out to graze every day, stays with it, moves it around and then brings it back to a large night camp at the end of the day. This approach spreads grazing pressure and reduces the risk of theft and poaching.

SOCIAL STRUCTURE

Sally says that she has never worked with a breed with a stronger maternal and herding instinct.

"The cattle form lifelong close-knit bonds. Cows form nursery groups and it's common to see a cow with three to four calves suckling from her. The advantage of a breed with such a strong maternal instinct is that calves have a higher survival rate, and are less likely to be exposed to predators."

The breed's strong herding instinct makes it easy to manage in a herd grazing system. It is difficult to separate and steal an animal from the herd, as it will head straight back to the herd.

FASTEST DEVELOPING MARKET

According to Sally, the adaptability and low management requirement of the Boran makes it ideal for small-scale farmers.

"This is the fastest-developing market for Borans in Zambia," she explains. "It's particularly sought-after by businessmen who want to build up their own herds."

For the Shiels, education is a priority. They regularly host information days for small-scale producers and commercial farmers. "This all forms part of our approach to raise the profile of the breed," she stresses.

On a larger scale, commercial cattlemen widely use Boran bulls in crossbreeding programmes.

"The Boran crosses well with any breed," Craig explains. "It's best to select the other breed to suit environmental and market conditions. A Boran-Brahman cross does well under extensive ranching conditions on harder veld, while a Boran-Angus or Boran-Bonsmara cross is better suited to a 'kinder' farm with maize stover to produce terminal crosses for the feedlot."

MARKET CHALLENGES

Historically, feedlots and abattoirs have preferred larger carcasses with a high percentage of fat, but Craig refers to the change in consumer tastes.

"At feedlots and abattoirs, we increasingly see good acceptance of Boran crosses as they can deliver a lean meat yield," he says. "This consumer preference for lean meat is also driving a greater demand for Boran carcasses.

"Consumers are looking for smaller cuts with the right fat cover and the Boran provides such tender beef."

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BELOW: The Boran breed has a strong maternal and herding instinct and cattle form close bonds. This means that calves have a higher survival rate and are easier to manage in a herd grazing system.