

# Genetic progress in SA's South Devon herd

South Devons have been farmed in South Africa for more than 100 years. These medium-framed British beef cattle are known for their high quality beef and exceptional maternal ability. **Nan Smith** looks at how genetic selection ensures the breed's competitiveness in tough environments, making them good candidates for local beef operations.



**L**ongevity, calm temperament, efficient feed conversion, good maternal ability and fertility, and excellent carcass traits are hallmarks of the South Devon breed.

Originally a dual-purpose breed, South Devon produces milk with high solids and good butterfat percentages, which helps it wean a heavier calf.

## GENETIC DIRECTION

BLUP technology makes it possible to separate environmental and genetic influences on a breed and evaluate genetic direction. Every breed should be reassessed periodically so that farmers are well-positioned to respond to changes in market demand. As consumers become more discriminating about the source areas of beef, veld-raised and

hormone-free beef has become more popular at the higher end of the market. However, the rise in global population means that feedlot beef production will always be vital to world supply.

The South Devon has the flexibility and quality to meet the demands of both markets as it does well on veld under the extensive farming conditions favoured by most SA beef farmers. The breed is also profitable in more intensive operations and feedlots where operators benefit from its feed conversion efficiency that allows weight gain on lower feed intakes. This ability to produce in different conditions, is a primary advantage of the breed and adds to its economic value.

## CALM TEMPERAMENT

Another advantage for producers is South Devons' calm temperament, which makes for easier management, with the knock-on effect of better production due to less stress and fewer labour requirements.



## REDUCED BIRTH WEIGHT

Like any other breeder, South Devon breeders put a great deal of energy into breeding productive cows that can calve at 24 months, re-conceive easily, calve every year after that, and raise weaners comfortably to target weights.

A cow's breeding value provides an index for the combined traits of fertility, calving ease, calf growth, milk production and cow weight.

During a 22-year period from 1990 to 2012, the South Devon herd showed a 1,67kg reduction in birth weight (direct), a trend with a high score for calving ease. The average phenotypic value of calves born in 2013 was 35,5kg, about 4,7kg lower than it was in 1990. This was achieved with very little change in the cow's ability to restrict her calf's *in utero* (maternal) birth weight.

There is always a tipping point in selecting for birth weight, which correlates to weight at later ages. Selection should therefore keep the balance between weight gain and reproductive problems. Selecting for growth can lead to higher birth weights, the major cause of calving difficulties, which has a negative impact on profit and production.

South Devon breeders have succeeded in selecting

for increased weaning weight while selecting against higher birth weight. The growth of the calf is determined by its own genes (birth weight direct) and to a certain extent by the cow's ability to restrict growth *in utero* (birth weight maternal). The direct breeding value gives the calf its genetic potential for growth and the cow gives her calf the opportunity to realise that potential through her milk and mothering instinct (maternal breeding value). These values are all strong in South Africa's South Devons.

Average post-weaning weight (12-month and 18-month weights added together) during the 22-year period showed a gain of 8,9kg, making the most of genetic potential through selection. From the beginning of 2011 to the end of 2013, there were average weight gains from an average birth weight of 36,6kg to 225kg at 205 days, and to 249kg at 365 days. Mature weight strongly correlated to birth weight came down, but has evened out at an average weight for a medium-framed cow of 480kg to 500kg.

Increasing and decreasing mature weight through selection will have a bearing on calving ease, feed requirements, cow efficiency and carcass weight.



**ABOVE LEFT:** South Devon cows provide a maternal environment that encourages weight gain and good grow-out in weaners.

**ABOVE RIGHT:** Fertility is the key to productive beef farming. South Devon cows have high values for fertility, calving ease and maternal ability.

**RIGHT:** South Devon breeders look for medium-framed bulls with good muscling, that can start working at 22 months to 24 months.

**OPPOSITE PAGE:** South Devon cattle have the biological flexibility to thrive in intensive and extensive systems. PHOTOS COURTESY OF ANDIRO SOUTH DEVON STUD



## THE KEY TO PRODUCTIVITY

Beef cattle farming relies on selling calves (weaned or grown out) to generate funds; fertility is therefore a key driver of productivity. According to the ARC, fertility has a heritability of 10% or less and involves age at first calving, the inter-calving period (ICP), calving ease, and longevity. South Devon cows fit these productivity models, with age at first calving down by 3,7 months, proven fertility, and high re-conception rates.

During the same 22-year period, South Devons' ICP improved by 4,5 days to a figure of well below of 400 days. Cattleman Dan Kriek says the breed's average ICP during the last three calving seasons was 381 days, 395 days and 386 days respectively. Genetic gains in fertility, shown by the improved ICP, boost margins, especially when there

are cows in the system that are still productive at 14 years or 15 years.

South Devon cows' age at first calving has decreased 3,7%, which shows genetic improvement in early-maturing animals. As a rule, heifers should be 65% of mature weight when first bred, and 85% of mature weight when they calve down.

Successful beef farmers are business-orientated and profit-driven. They will look for economically important traits that can generate high returns and give their herds some balance. South Devons offer solid strength across the genetic range and several unique trait combinations that can improve herd profitability.

- Source: Leslie Bergh of Bull's Eye Consulting, 'Genetic trends in the South Devon Breed in South Africa.'
- Phone the South Devon Cattle Breeders' Society on 051 410 0967.