The improved Boer goat

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Abstract

The history, origin and characteristics of the South African Boer breed of goats are reviewed. The development was carried out by a handful of farmers in the Eastern Cape, particularly in the district of Somerset East. The prototype for the breed was selected from several existing breeds of goats in South Africa in order to achieve the present functional characteristics and type. The Boer goat is a hardy breed with great capacity for adaptation and an exceptional ability to withstand and resist diseases. The Boer goat is highly fertile, conception rate is about 90%, kidding rate about 189% and fecundity rate 210%. Weaning weight at 120 days averages 29 kg. Boer doe produces enough milk to raise twins easily. Boer goat yields flavoursome, succulent, tender and tasty lean meat of high quality, particularly during the young stage. Boer goat is able to maintain a high level of production up to 10 years of age. Details on breed standards of the Boer goat are presented. Numerous countries had imported Boer goats from South Africa including USA, New Zealand, Australia, Germany, Israel, France and more recently China. © 2000 Published by Elsevier Science B.V. All rights reserved.

Keywords: Boer goats; Origin; Characteristics; Breed standards

1. The history of the improved (ennobled) Boer goat

The factor that makes the breeding history of the improved Boer goat unique, is the fact that the breed was not created from two or more pure breeds as is the case with other varieties of animals bred in South Africa. Rather, the prototype for the breed was selected from all the existing breeds of goats in South Africa in order to achieve the functional characteristics and type as they are today—hence the name Improved (or ennobled) Boer goat (Fig. 1).

This pioneer work was chiefly carried out by a handful of farmers in the Eastern Cape, particularly in the district of Somerset East. The highlight in the history of the Boer goat was when the Boer goat Breeders’ Association of South Africa was founded on 4 July 1959 at Somerset East.

2. The economic value of the Boer goat

Economical farming implies profitable farming. The livelihood of the farmer depends on farming with an animal or crop which ensures the highest possible yield and profit in the environment applicable. The farmer also depends on optimal sustainable utilisation of the natural resources. The Boer goat fulfills the above aims in the following way, in terms of its characteristic features.

2.1. Meat of a high quality

Considered in the light of the health-consciousness that prevails on a worldwide basis, the Boer goat yields lean meat of high quality, particularly during the young stage. The meat is flavoursome, succulent, tender, extremely attractive and tasty. Currently, the
meat is much sought after for barbecue and spit roasting purposes. For this reason, goats should be marketed between the age of 6 and 15 months, and carcasses should weigh no more than 23 kg. Older goats in good condition yield biltong (jerky) and dried sausage of very good quality, which can compete with the very best on the market.

In the light of the predilection for the Boer goat meat displayed by certain consumers in South Africa and the rest of the world, along with the characteristics required for the right type of meat for the health-conscious sector of consumers worldwide, one cannot but predict a rosy future for Boer goat meat originating from goats of high quality. Comparatively speaking, Boer goat meat is somewhat more expensive per kg than mutton in South Africa. Taking into consideration that 60% of the red meat consumed in the world, is goat meat, then it is imperative the influence that the South African Boer goat will have on the amount of goat meat produced, be recognised. Looking back over the past 60 years it is astounding to see the success that the South African Boer goat breeders have achieved in developing this wonderful animal, with its red head, white body, short smooth hair covering and excellent conformation. There is no doubt that the South African Boer goat is the best meat goat in the world. To illustrate how goat meat compares with that of other farm animal species, some of its characteristics are set out in Table 1.

2.1.1. The pelt
The pelt of the Boer goat has a leather of relative inferior value, when compared with other small stock breeds. An endeavour should be made to breed goats with short, smooth hair, since this increases the quality of the pelt. The pelts of Boer goats are used for making the uppers of shoes, as well as for gloves and book covers.

<table>
<thead>
<tr>
<th></th>
<th>Energy calories</th>
<th>Fat (g)</th>
<th>Satured fat (g)</th>
<th>Protein (g)</th>
<th>Iron (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goat</td>
<td>122</td>
<td>2.58</td>
<td>0.79</td>
<td>23</td>
<td>3.2</td>
</tr>
<tr>
<td>Beef</td>
<td>245</td>
<td>16.00</td>
<td>6.80</td>
<td>23</td>
<td>2.9</td>
</tr>
<tr>
<td>Pork</td>
<td>310</td>
<td>24.00</td>
<td>8.70</td>
<td>21</td>
<td>2.7</td>
</tr>
<tr>
<td>Lamb</td>
<td>235</td>
<td>16.00</td>
<td>7.30</td>
<td>22</td>
<td>1.4</td>
</tr>
<tr>
<td>Chicken</td>
<td>120</td>
<td>3.50</td>
<td>1.10</td>
<td>21</td>
<td>1.5</td>
</tr>
</tbody>
</table>
2.2. Hardy and adaptable

The Boer goat is undoubtedly one of the hardiest small stock breeds in the world, with great capacity for adaptation. It is, therefore, encountered in a great variety of climatic and pasture conditions and is consequently fit for conditions varying from extensive to intensive. The Boer goat is an excellent walker, with sturdy legs and is able to move easily in rugged mountainous areas and through dense bush. During drought conditions, the Boer goat survives without supplementary feeding.

2.3. Resistance to diseases

The Boer goat has an exceptional ability to withstand and resist diseases such as blue tongue, prussic acid poisoning and, to a lesser extent, enterotoxaemia (pulpy kidney). As far known, Boer goats do not contract blue tongue. The grazing habits of the Boer goat also makes it less susceptible to infection caused by internal parasites, as Boer goats prefer to graze above the ground (browse).

2.4. Fertility and kidding percentage

The Boer goat is very fertile and is not seasonal. Furthermore, multiple births are the rule rather than the exception, with an average kidding percentage of 180. This exceeds the kidding rate attained in other small stock breeds. These two important economic characteristics have made the Boer goat very popular for the following reasons.

- As the Boer goat is not seasonal, the kidding season can be selected to fit in with the period when feed is most plentiful. Under intensive conditions, kidding can occur every 7–8 months.
- Its exceptionally high kidding rate implies that the Boer goat cannot be surpassed with regard to the percentage of meat per kilogram per doe or per hectare. This factor places the Boer goat very high on the ranking list with regard to intensive farming.

At the Department of Agriculture, the following average reproductive performances were obtained over a 20-year period, on natural pasture with an annual rainfall of 450 mm (18 in.):

<table>
<thead>
<tr>
<th>Performance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conception rate (does kidding/does mated)</td>
<td>90%</td>
</tr>
<tr>
<td>Kidding rate (kids born/does mated)</td>
<td>189%</td>
</tr>
<tr>
<td>Fecundity (kids born/does kidded)</td>
<td>210%</td>
</tr>
<tr>
<td>Weaning rate (kids weaned/does mated)</td>
<td>149%</td>
</tr>
<tr>
<td>Weaning weight at 120 days</td>
<td>29 kg (64 lbs)</td>
</tr>
</tbody>
</table>

The mean body weight of adult rams vary between 100 and 120 kg (220–242 lbs), while that of the adult doe varies between 70 and 80 kg (154–176 lbs).

2.5. Abundance of milk

Growth rate of the kid is linked to sufficient milk production by the doe and good nurturing instincts in does with regard to their young. A doe has enough milk to raise twins with ease.

2.6. Longevity

The Boer goat is able to maintain economic production up to the age of approximately 10 years. This implies that the percentage of young replacement does which have to be withheld, is very low.

2.7. Grazing habits

Goats prefer small trees and shrubs as their basic diet, but their exceptional economic value lies precisely in the fact that they are able to utilise certain plants which are less appetising to other stock breeds. Experiments undertaken at Omatjenne Experimental Farm (Namibia) has shown that a Boer goat consumes 75% leaves and 26% grass. As a result, it is possible to farm with cattle and Boer goats simultaneously, without them being in competition with each other. In this way, the maximum kilogram meat per hectare can be produced. As a result of the grazing habits of the Boer goat, it can be successfully incorporated to utilise bush and shrubs, and thus to assist in controlling infiltration of bush to a certain extent. With the assistance of the S.A. Department of Agriculture, trials were performed in the late 60s on the grazing ability of goats on pastures consisting of grass and shrubs. The paddocks, grazed by goats, showed an improvement in grass coverage, over a 4-year period of 57%, while those grazed by sheep a decrease of 18%. The shrubs were well controlled and kept down to a reasonable height.
When one considers all these characteristics of the Boer goat along with the restricted natural pastures available in South Africa, it is natural to assume that the Boer goat industry cannot but grow in the future.

3. Breed standards of the Boer goat

The following are the breed standards as drawn up and accepted by the Boer Breeders’ Association of South Africa. The aim of the breeding standards are to improve the breed and to increase the economy value.

3.1. Conformation

3.1.1. Head

A strong head with large soft brown eyes, without a wild look. A strong slightly curved nose (Roman nose), wide nostrils, strong well-formed mouth with well-fitted jaws are a prerequisite. Up to the four-tooth stage, goats must show a 100% fit. Six-tooth goats and older may show a 6 mm protrusion. Permanent teeth must cut in the correct anatomical location. The forehead must be prominently curved, linking up with the curve of nose and horns. Horns should be strong, of moderate length and placed moderately apart with a gradual backward curve. Horns must be as round and solid as possible and darkly coloured. Ears are to be broad, smooth and of a medium length, hanging downwards from the head. Too short ears are undesirable.

3.1.1.1. Characteristic cull defects. Concave forehead, horns too straight or too flat, pointed jaw, ears folded (lengthwise), stiff protruding ears, too short ears, too long lower jaws, short bottom jaw and blue eyes are not desirable.

3.1.2. Neck and forequarters

A neck of moderate length in proportion to the length of the body is required, full and well fleshed and well-joined with the forequarter. The breastbone (sternum) should be broad with a deep and broad brisket. The shoulder should be fleshy, in proportion to the body, and be well-fitted to the withers. The withers should be as broad and as well-filled as possible (not too sharp).

The front legs should be of medium length and in proportion to the depth of the body. The legs should be strong and well placed, with strong pastern joints and well-formed hoofs, which are as dark as possible.

3.1.2.1. Characteristic cull defects. Too long, thin neck, too short neck, too loose shoulders are discriminated against.

3.1.3. Barrel or thorax

The ideal is a long, deep broad barrel. The ribs must be well sprung and fleshed, and the loins as well fitted as possible. The goat should have a broad, fairly straight back and must not be pinched behind the shoulders.

3.1.3.1. Characteristic cull defects. Back too concave, too slab sided, too cylindrical or pinched behind the shoulders.

3.1.4. Hindquarters

The Boer Goat should have a broad and long rump with not too much of a slope. Well fleshed buttocks which are not too flat, and goat should have fleshed thighs. The tail must be straight where it grows out of the dock and then swing to either side.

3.1.4.1. Characteristic cull defects. A rump that slopes too much, or is too short. A too long shank or flat buttocks.

3.1.5. Legs

Emphasis should be placed on the legs which should be strong and well placed. Too fleshy legs are undesirable. Strong legs imply hardiness and a strong constitution, which is absolutely essential for the Boer Goat.

3.1.5.1. Characteristic cull defects. Knock knees or bandy legs are not acceptable. Legs that are too thin or too fleshy are discriminated against, as well as weak pasterns and hoofs pointing outwards or inwards.

3.1.6. Skin and covering

A loose supple skin with sufficient chest and neck folds, especially in the case of rams, is essential. Eyelids and hairless parts must be pigmented. The
hairless skin under the tail should have 75% pigmentation for stud purposes with 100% pigmentation the ideal. Short, glossy hair is desirable. A limited amount of fur will be tolerated during the winter months.

3.1.6.1. Characteristic cull defects. Covering too long and coarse or too much fur is not acceptable.

3.1.7. Sexual organs

Doors: Well-formed udder firmly attached with no more than two functional teats on a side. Permissible defects: (a) If there is no indication that the teat is separating, but there are two milk openings, this is acceptable. (b) Double teats: the front 50% should be split. Rams: Two reasonably large, well formed, healthy and equal sized testes in one scrotum. A scrotum with a split no larger than 5 cm is permissible. The scrotum must be at least 25 cm in circumference.

3.1.7.1. Characteristic cull defects. Bunched, calabash or double teats. Too small testes and a scrotum with more than a 5 cm split warrants culling.

3.1.8. Quality

This is achieved with short glossy hair and a fine lustre.

3.1.9. Size

The ideal is an average sized, heavy goat with maximum meat production. A desirable relationship between length of leg and depth of body should be achieved at all ages. Kids should tend to be longer in the leg.

3.1.9.1. Characteristic cull defects. Goats too large or too small (pony) are discriminated against.

3.1.10. Colouring

The ideal is a white goat with a red head and ears, and fully pigmented. The blaze must be evident. Shadings between light red and dark red are permissible. The minimum requirement for a stud animal is a red patch of at least 10 cm in diameter on both sides of the head, ears excluded. Both ears should have at least 75% red colouring and the same percentage of pigmentation.

3.1.11. Explanation of breed standards

In applying standards, there are many aspects which cannot be fully defined. In such cases the inspector or judge must use his/her discretion. In spite of the breed standards being clear and to the point, it is nevertheless necessary to supply additional information in respect to certain descriptions. The major part of the body of the goat must be white to make it conspicuous and to facilitate the rounding up of goats in dense terrain. A pigmented skin on the hairless parts, e.g. under the tail, round the eyelids and mouth etc., is absolutely essential, because it offers resistance to sunburn, which may result in cancer. A pigmented skin is also more resistant to skin disease.

A loose, supple skin is essential for adaptability to climatic conditions. In South Africa, which is a warm and sunny country, an animal with a loose skin and short hair is better adapted. In addition a skin of this kind provides additional resistance to external parasites.

4. General

Since 1995, after the first Boer goats (from South Africa) kidded in North America, officials from the S.A. Boer Goat Association have been invited to promote the breed and judge at national shows. At the National show in Kerrville, Texas in 1998, they had no less than 470 pure bred Boer goats. According to the American Meat Goat Association, the market is swinging towards the Boers, because of the better quality meat and the heavier carcass that is produced. There are approximately five million goats in America, of which the overwhelming majority are comprised of Spanish Meat Goats. These goats tend to remind one of the old indigenous goats of Africa. There is much room for improvement and it is here that the Boer Goat has the potential to fill in an enormous gap. There is no doubt that the standard of Boer goats in the USA has improved remarkably over the last few years. This improvement can only be maintained if the direct imports of live goats or embryos are sustained. Up until August 1998, approximately 4000 Boer Goats from South Africa were sold in America. They were either imported directly from South Africa or via Australia or New Zealand. There are approximately 8000 Boer Goats in the USA at present. In Australia and New Zealand a similar interest and active promotion of the Boer goat is underway.
First crosses with the local Feral goat has shown a 40% increase in carcass weight. Australia has the potential of becoming one of the largest goat producers in the world. The latest demand for this unique breed has come from China. Embryos have already been imported and many animals have been and will be exported to China. Many countries such as Germany, Israel and France have also imported goats in the past.

The Boer goat also has a leading role to play in helping to feed the third world countries, since it can be used in crossbreeding programmes to improve the quality and body weight of indigenous goats. With the Boer goats’ ease of adaptability to intensive or harsh extensive conditions, it holds great promise in increasing the production of animal protein for human consumption.