

NDEBELE

Synonyms. This goat appears to have been inadequately described in the past and has been remarked to occur in the "Gwanda-Tuli area of Rhodesia" and in "Matabeleland". The term Ndebele is here proposed for the first time.

Sub-types and races. This is similar to the Tswana.

Distribution. South-west Zimbabwe. Small goats with shorter ears, similar to the Small East African group, are found in the remaining areas of Zimbabwe.

Ecological zones. Semi-arid.

Management systems. Principally agro-pastoral. There were only 6200 goats on large scale commercial farms in Matabeleland in 1982 and 3100 on small scale commercial farms.

Physical characteristics.

Large size. Weight: males 50-55 kg; females 39 kg.

Head rather fine, forehead flat, profile straight or dished (Figure 28).



Figure 28 Ndebele male goat at Matopos research station, Zimbabwe

Horns present or absent in both sexes: males flattened in cross-section, directed backwards with little lateral tendency; females finer and scimitar-shaped, some females have only scurs. Ears medium-long and broad, lopped with tip occasionally turned up. Beards in both sexes. Males have top knot.

Neck short. Chest shallow. Withers lower than sacrum. Back short and dipped. Croup short and sharply sloping. Legs long and lightly boned.

Colour variable with whites and creams predominant but many others and mixed colours common. Coat short or long, males may have "cape" over shoulders, chest and fore legs.

Products. Meat.

Productivity.

REPRODUCTION. *Multiple births:* 67.0 per cent of does mated gave birth to more than one young at Matopos; of does kidding, single 36.4 per cent, twin

62.0 per cent, triplet 1.6 per cent. *Litter size*: 1.54 (n=549). *Fertility* (=percentage of dams giving birth): 87.5 per cent. *Birth rate* (=progeny born/does mated): 159.9.

GROWTH. *Birth weight*: 2.53 kg (n=905). *Weight for age*: 3 months-13.9, 5(weaning)-15.9 (twins 13.5), 18-31.3 (twins 28.6), 30-35.0, 42-38.7, 54-39.1 kg, data from weaning relate to females only; 140 days(weaning)-15.2 kg (n=759). *Average daily gain*: birth-12 weeks -109, birth-20 - 97, post-weaning - 39g.

Phenotypic correlations among growth traits at Matopos were 0.45, 0.46 and 0.21 for birth and weights at 12 weeks, weaning (150 days) and 18 months and 0.29 and 0.31 for birth weight and daily gains from birth to 12 weeks and birth to weaning.

MEAT. *Dressing percentage*: 43.7 at live weight of 30.9 kg in castrated males at about 24 months; 43.5 at live weight of 31.4 kg (n=292) in castrated males at about 23 months.

Research. Matopos Research Station, Private Bag K5137, Bulawayo, Zimbabwe.

References. Arrowsmith & Ward, 1981; Tawonezvi & Ward, 1986.

LANDIM

Synonyms. Mozambique ("Landim" = Portuguese "Landrace").

Origins. Possibly has some early incorporation of European blood.

Sub-types and races. The Pafuri in Gaza Province of western Mozambique is a Boer x Landim derivative.

Distribution. Mozambique, south of the Limpopo and in Tete Province.

Ecological zones. Semi-arid to sub-humid monomodal rainfall area in sub-tropical southern Mozambique.

Management systems. Sedentary agro-pastoral with cultivation of annual subsistence crops being the dominant farm enterprise. An urban system is developing rapidly. Total population of this type of goat is probably less than 400 000.

Physical characteristics. Fairly large size 65 cm. Weight: male 50 kg; female 35-40 kg.

Head fairly heavy, concave profile in females, slightly convex in males.

Horns in both sexes: 96 per cent of all animals but 31 per cent have only rudimentary horns or scurs; heavier in males than females but grow upwards and backwards in both sexes; length 11.3 cm, males 2.3 cm longer than females. Ears medium-long, carried erect or horizontal, 13.3 cm (Figure 29). Toggles present in 7 per cent of both sexes. All males have beard but only 12 per cent of females. Male has short stiff mane extending down back line.

Neck short and thick. Chest well developed, girth measurement exceeding withers height considerably at all ages (Table 22). Back short. Croup fairly long but sloping. Legs medium length.

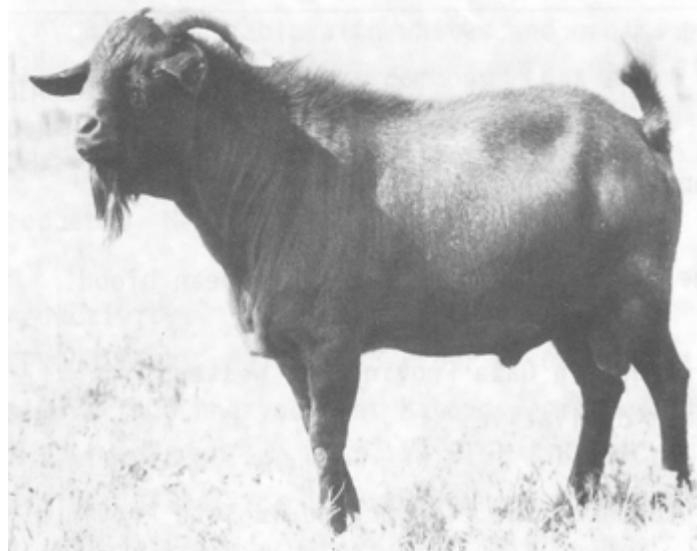


Figure 29 A male Landim goat at Chobela Research Station, Mozambique

Colour variable, commonly dark brown (36.3 per cent), black (23.6 per cent), pied (23.6 per cent), white (4.5 per cent), yellow (4.5 per cent) and several combinations of colours. Coat usually short and fine.

Products. Meat.

Table 22 Body measurements and body mass of female Landim goats

Age	Pairs permanent incisors	Months	n	Shoulder height (cm)		Ches girth (cm)		Weight (kg)	
				x	s.d.	X	s.d.	x	s.d.
0	<14.3	9	49.7	4.3		63.1	5.2	19.4	3.4
1	14.3-19.8	7	52.4	4.8		69.3	8.0	26.6	7.3
2	19.8-24.5	21	55.7	3.6		72.5	4.5	30.7	4.9
3	24.5-32.0	32	53.5	4.0		73.5	3.7	31.8	4.0
4	32.0-42.0	22	57.7	3.1		78.6	3.7	37.2	5.1
Aged	>42	10	57.5	4.8		80.1	4.5	38.5	6.1

Productivity.

REPRODUCTION. *First kidding: 781 ± 319.3 (s.d.) days (n=175). Kidding interval: 373 ± 167.1 (s.d.) days (n=255). Multiple births: common. Litter size: 1.57 ± 0.53 (s.d.) (n=350). Annual reproductive rate: 1.75 kids per doe. Age at first kidding and kidding interval controlled by station management.*

GROWTH. *Birth weight: 2.34 ± 0.441 (s.d.) kg (n=464); males 2.5 kg, females 2.3 kg; singles 2.5 kg, multiples 2.3 kg; kids born in rains and the early part of the dry season are heavier than those born in the late dry season. Weight for age: 90 days-9.6, 180-14.3, 365-22.0 kg. Average daily gain: birth-90 days - 76, 90-180 - 53, 180-365 - 52, birth-365 - 54 g.*

Research. Institute of Animal Production, CP 1410, Maputo, Mozambique.

References. Wilson, Murayi & Rocha, 1989; Rocha, McKinnon & Wilson, 1990a.

NUBIAN

Synonyms. Shukria (Eritrea).

Origins. The Nubian is one of a group of similar goats common throughout the Middle East and extending as far eastwards as India. The centre of

origin of this type was most likely in Iran during Assyrian times. It is not likely that it is descended from the Himalayan tahr as, although the tahr male will mate with goat females, foetuses are aborted. Similarly, there is no evidence that the Nubian has at some time crossed with the Walia Ibex in Ethiopia.

Sub-types and races. Classed as a breed group and includes Mzabite (Algeria) and Zaraibi (Egypt) as well as the Nubian proper (Figure 30) and the Shukria. Very similar to the Damascus goat of the Near East and said also to be closely similar to the Syrian Mountain.

Common ancestor, with several other breeds, of Anglo-Nubian.

Distribution. Riverain and urban areas of the northern part of the Republic of Sudan, north of 12°N and westwards to E1 Obeid. Also in Eritrea. Similar types throughout North Africa, Near and Middle East. Population of Nubian proper estimated at 2.5 million during 1950s.



Figure 30 Female and young Nubian goats on the Nile bank at Shendi, Sudan

Ecological zones. Arid and extreme arid areas but, as noted, essentially along rivers and in urban or peri-urban areas.

Management systems. Urban. Owned primarily by urban dwellers in small numbers with flock sizes ranging from 2 to 10 animals. Usually free roaming during the day, scavenging in towns and confined and fed household wastes and occasionally concentrates at night. Also owned by settled agriculturalists on irrigation schemes along both White and Blue Niles south of Khartoum and along main Nile north of Khartoum.

Physical characteristics. Large size 70-75 cm; Shukria up to 85 cm. Weight: male 50-70 kg; female 40-60 kg.

Head small to medium, forehead prominent, profile markedly convex in males and usually so in females, depression just behind nostrils, prognathous to some degree (Figure 31).

Horns when present rather light and of medium length: simple or partially twisted backwards or divergent sweep in males; usually backward sweeping in females but some diverge. Ears long (25 cm), broad, pendulous with bottom one-third turning upwards; trail on ground when head down for feeding. Toggles, short in length, occur occasionally in both sexes. Beard usually absent. Knot of hair on forehead common.



Figure 31 Topknot, profile and prognathous jaw of male Damascus goat in Tunisia

Neck moderately long and rather heavy. Chest fairly deep. High withers. Back long and straight. Croup well developed with tail set high. Long but well proportioned legs. Udder well developed.

Colour generally black except for ears which are grey or speckled grey; other colours from light fawn through to dark chocolate brown also occur. Coat variable in length, generally long, longer hair on front legs and especially on hindquarters and hind legs give appearance of breeches.

Products. Milk.

Productivity.

REPRODUCTION. *Age at first oestrus:* 213.2 days in Egypt. *Kidding interval:* 228 ± 17 days in Sudan; 6-8 months in Egypt. *Multiple births:* fairly prolific with high proportion of twin births; 66.1 per cent single, 30.4 per cent twin, 3.5 per cent triplet; in Egypt about 90 per cent of does lambing had multiple births. *Litter size:* 1.40 in Sudan; 1.38 in Egypt. *Oestrus cycle:* 4-30 (10) days with heat lasting 12-48 hours; oestrus throughout year with peaks in January, June and September and least activity in August and November in Sudan; least activity in March and April in Egypt. *Ovulation rate:* 2.67 and 2.53 in 2 years in Egypt, more than half of does having more than 3 corpora lutea. *Gestation period:* 146.0 ± 1.1 (s.e.) days in of male and female Nubian kids weaned at 10 weeks and Sudan; 156.5 ± 0.66 (s.e.) days in egypt. *post-partum anoestrus:* 123.5 days following 84 days suckling in Egypt.

Table 23 Monthly average body weights of male and female Nubian kids weaned at 10 weeks and fed a 29.8 per cent crude protein concentrate ad lib from 4 weeks

Age	Sex			
	Male		Female	
	kg \pm s.d.		kg \pm s.d.	
Birth	2.5	0.5	2.1	0.3
4 weeks	4.1	1.2	3.7	0.6

8 weeks	6.0	2.5	5.1	1.3
12 weeks	9.3	1.9	7.1	1.7
16 weeks	9.0	2.0	8.3	1.7
20 weeks	11.0	2.2	9.1	2.8
29 weeks	13.1	3.2	11.7	1.2
28 weeks	15.9	2.8	13.	1 2.9

GROWTH. *Birth weight:* $2.96 + 0.07$ (s.e.) kg; males 2.5 ± 0.5 , females 2.1 ± 0.3 at Khartoum University. *Weight for age:* males heavier than females at birth and to 7 months at Khartoum University (Table 23); males 22.2 kg at 12 months, females 18.0 kg. *Average daily gain:* 1-4 weeks - males 60 females 70, 5-10 weeks - males 60 females 50, 11-20 weeks - males 30 females 50, 21-28 weeks - males 90 females 60 g; birth-1 year - males 56 females 50 g.

MILK. *Lactation length:* 147 days in Sudan; 90-120 days in Egypt. *Yield:* 73.5 kg in Sudan; 1.5-2.0 kg per day, 150-200 kg per lactation in addition to that taken by kids in Egypt. *Composition:* total solids 10.5-13.0 per cent, fat 2.9-3.5 per cent, solids-not-fat 7.7 per cent, protein 3.1-3.9 per cent, lactose 4.7 per cent, ash 0.85-0.88 per cent; mineral content generally high Ca 30.2, P 13.4, Mg 3.1, Na 2.4, K 14.0 mg/g DM, Cu 6.3, Zn 55.3, Fe 6.1 ug/g DM.

Kids are prevented from suckling by means of a bag over the udder (Figure 32) or by tying the teats with cord.

MEAT. *Dressing percentage:* 43.2 at 14.1 kg live weight with cotton seed cake as nitrogen source and 38.4 at 12.1 kg live weight with blood as nitrogen source. *Carcass composition:* gut fill 23.6 and 26.7 per cent in the 2 samples cited above, head 9.9 and 11.0, hide 8.9 and 9.2, feet 4.5 and 4.4. Lean/ bone/fat present at 52.2/28.1/19.7 per cent in cotton seed cake supplemented animals and 45.4/ 28.8/ 25.8 in blood supplemented ones.



Figure 32 Nubian female goat in Batn elHaggar, Sudan, with udder bag to prevent suckling by kids

Research. Animal Production Research Administration, Ministry of Animal Resources, P.O.Box 293, Khartoum, Sudan. Faculty of Veterinary Science, University of Khartoum, P.O.Box 32, Khartoum North, Sudan.

References. Gray, 1953; El-Nairn, 1979; Abdelaziz, Musa & Ali, 1982; Sulieman & El-Shafei, 1984; El-Tayeb et al, 1987; Abdel Rahim, 1987; Maglad & Kudouda, 1987; Aboul-Ela et al, 1988.