

The Muturu: A rare sacred breed of cattle in Nigeria

Olufunmilayo A. Adebambo

*Department of Animal Breeding and Genetics, University of Agriculture,
P.M.B. 2240, Abeokuta, Nigeria*

Summary

The Muturu, a trypanotolerant cattle breed is probably one of the least known breed of cattle in West Africa. Little has been published on its distribution, management, morphological characteristics or biological performance.

Early reports showed that the Muturu cattle were once widely distributed across the continent from Liberia, across the West African subregion, to Ethiopia. However, due to expansion of the Zebu population and rapid urbanization, the small bodied animal came under pressure and was found surviving in pockets of the savannahs and in the humid forest zones where it had the comparative advantage of trypanotolerance. The survival of the cattle in the humid and forest zones of Nigeria stems from the fact that the animal is still sacred in so many communities and its milk is widely used for medicinal purposes. In some states of Nigeria, the semi-feral Muturu are not tended but hunted when required for sacrifice.

From a population size of 0.4 million heads in 1960, Akinwunmi and Ikpi, (1985) reported a decline in the population of the breed to 50-80 thousand in the late 1980s in Nigeria although RIMS (1992), reported a population growth to 115 172 heads. With limited data bank information on their adaptation and productivity, possible identification of genes that confer resistance to or tolerance of environmental stress in these animals will be of global significance.

Resumen

La raza Muturu, raza bovina tripanotolerante, es probablemente una de las menos conocidas del Africa oriental. Se ha publicado muy poco sobre su distribución, gestión, características morfológicas o rendimientos biológicos.

Unos primeros informes mostraban que la raza Muturu antiguamente se hallaba a lo largo de todo el continente, desde Liberia, pasando por las regiones del Africa oriental, hasta Etiopia. Sin embargo, debido a la expansión de la población de Zebu y a la rápida urbanización, los animales de pequeño tamaño se encontraron bajo presión y hallaron la supervivencia sólo en pocas zonas de savana y en los bosques húmedos, donde se encontraba la ventaja comparativa de la tripanotolerancia. La supervivencia de bovinos en zonas húmedas y de bosques de Nigeria se debe a que este animal es considerado sagrado en muchas comunidades y su leche se utiliza mucho en prácticas medicinales. En algunos estados de Nigeria los animales Muturu sólo se cazan cuando se requiere un sacrificio.

Partiendo de una población de 0,4 millones de animales en 1960 (Akinwunmi y Ikpi, 1985), se ha llegado a una población de 50-80 mil animales en Nigeria a finales de los años 80, a pesar de que RIMS (1992) indicaba una población de 115 172 animales. Dada la limitada información sobre su adaptación y productividad, resultaría de gran importancia la identificación de los genes que confieren resistencia o tolerancia a las condiciones de estrés ambiental en estos animales.

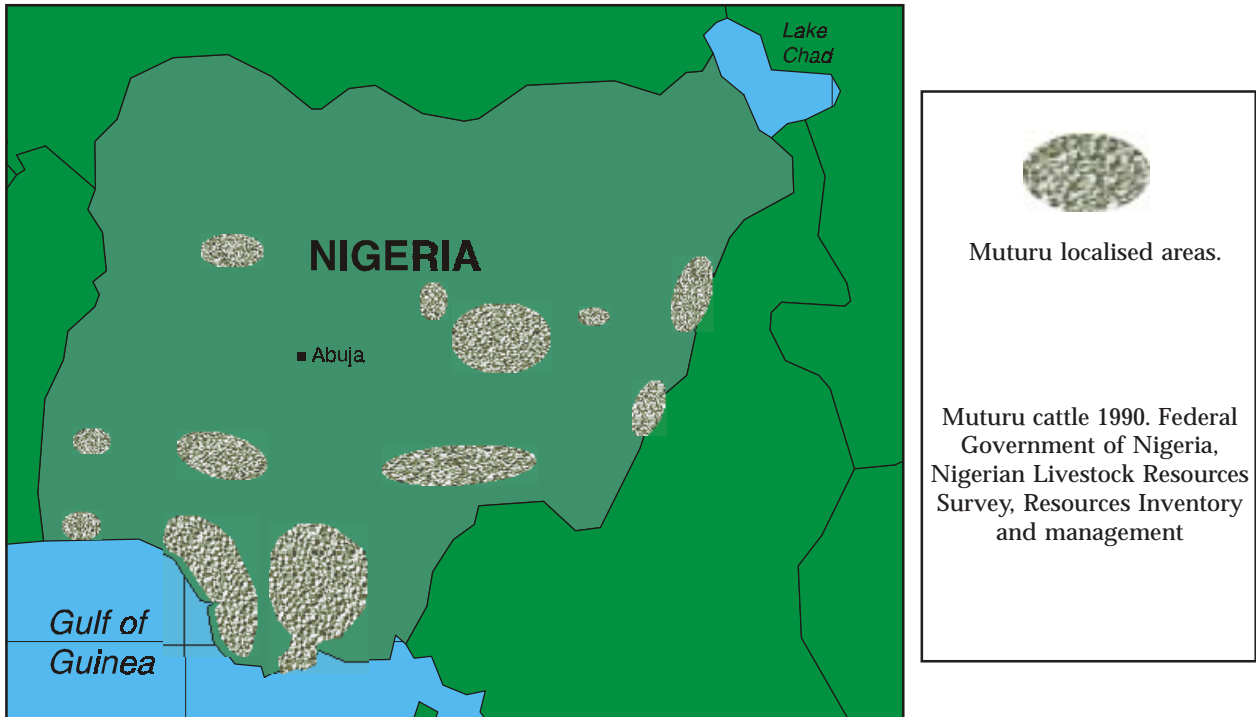


Figure 1. Nigeria's short horn cattle breed - the Muturu distribution (Rim, 1992)

Keywords: Muturu, Origin and distribution, Trypanotolerant breeds, Characterisation. Productivity.

Introduction

Nigeria's cattle population

The Federal Office of Statistics gave fluctuating cattle data of 3.45-7.49 million between 1960 and 1986, while FAO gave

figures of 10.86-12.30 between 1963 and 1989 with a population growth of 0.6 percent per annum between 1975 and 1987. A recent livestock survey (RIM, 1992) gave a cattle population of 13.89 million out of which 115 172 were Muturu (Table 1) constituting 64 percent of the total trypanotolerant cattle population in the tsetse infested forest zone of Southern Nigeria (Table 2), compared to Akinwumi and Ikpi's 55.7 percent in 1985.

Table 1. 1990 National Cattle Population (Resource Inventory Management Ltd. 1992).

Species	Pastoral	Village	Urban	Total	% SE
All cattle	11 478 145	2 358 078	49 590	13 885 813	1.6
Muturu	-	114 241	931	115 172	19.5
Zebu and others	11 473 800	2 248 182	48 659	13 770 641	1.6

Origin and distribution of Muturu breed

Epstein (1971) reported that the most common type of cattle in Northern Nigeria until the Fulani invasion of 1820 was the West African Shorthorn (WAS). The original breeding area of the WAS stretches on an almost continuous belt from Liberia to Cameroon. They were found in all the coastal countries and also in the Southern part of Upper Volta (Burkina Faso). They derive from the shorthorn humpless (*Brachyceros*) cattle which appeared in ancient Egypt in the middle of the second millennium BC and were first recorded in West Africa during the second half of the first millennium.

Trypanotolerant cattle breeds

The trypanotolerant cattle breeds in Nigeria comprise the N'Dama, Muturu and the Keteku. The Keteku happens to be a cross between Zebu and the Muturu. These three breeds were reported to make up 21.93 percent of the total cattle population of the southern humid/forest zones of Nigeria. Out of this total, the Muturu comprise 55.7 percent, the N'Dama 36.9 percent and the Keteku 7.4 percent (Akinwunmi and Ikpi, 1985).

The Muturu population was 8.3 percent of the total cattle population of Nigeria (RIM, 1992). The total trypanotolerant cattle population which stood at only



Figure 2. Herded Muturu in villages.

Table 2. The Muturu as percent of Trypanotolerant cattle per state (Akinwunmi & Ikpi, 1985).

State	No of heads	% of total trypanotolerant/State
Ogun	536	8.1
Ondo	3 660	56.4
Oyo	8 447	35.1
Lagos	1 217	30.8
Bendel	1 547	75.8
Anambra	11 310	92.4
Imo	7 412	96.1
Rivers	329	84.7
Cross River	2 575	96.9



Figure 3. Mature Muturu compared to mature Bumahi (white).

200 000 declined almost by a third in the 1980s. However, the N'Dama population increased from 15 to 20 thousand heads as opposed to other breeds through a special programme implemented with N'Dama cattle breeds in the 1980s. Five thousand heads of N'Dama were imported from Liberia (Shaw and Hoste, 1987) with the result that six N'Dama cattle multiplication centres currently exist in Southern Nigeria to provide information on the N'Dama and Keteku at the expense of the indigenous Muturu (Table 3).

The Muturu Breed

The Muturu breed; a variety of the West African shorthorn is also known as the Nigerian Shorthorn, the Pagan cattle, the Savanna Muturu in the South-West and Forest Muturu in the Middle Belt and Eastern parts of the country (Figure 1).

Its relatives, the Liberian Dwarf found in Liberia and the Bakwiri found at the foot of Mount Cameroon in South West Cameroon, were classified as almost extinct (Mason, 1988). The Muturus are reared for sacrifice at

major ceremonies such that ritual restrictions surround their management. As males are slaughtered for ceremonies there is an acute shortage of breeding males. This prevented the Muturus from realizing their breeding potential even under traditional management. One of the assumptions behind the importation of N'Dama is that Zebu cattle cannot sustain comparable productivity as the Muturu in similar conditions and the N'Damas are closer to Muturus than the Zebu breed.

During the Nigerian civil war, 1967-1970, it was recorded that many Muturu cattle were slaughtered to feed the starving human population. They were thus decimated both during and immediately after the civil war. Where some herds survived, owners were known to have preserved their animals by hiding them in caves. From these the Muturus were once again multiplied in Imo and Akwa Ibom States where the Zebu cattle were rejected as hazardous. Muturu populations compared to those of Keteku in some states are shown in Table 4 (Oloruntobi, 1994).

Table 3. Trypanotolerant cattle multiplication herds (after Shaw, 1985).

Name	Location	Responsible organisation	Size (ha)	Breeds	Number
Upper Ogun Ranch	Oyo State	Western Livestock Company	10 522	N'Dama	2 258
Fashola Stock Farm	Oyo State	Ministry of Agriculture	550	N'Dama and Keteku	620
Ogboro Cattle Ranch	Oyo State	Western Livestock Company	1 864	N'Dama	1 646
Akunnu Cattle Ranch	Ondo State	Western Livestock Company	8 094	N'Dama	1 652
Oke Ako Ranch	Ondo State	Western Livestock Company	10 025	N'Dama and Keteku	455
Imeko Ranch	Ogun State	Western Livestock Company	4 000	N'Dama	200

Table 5. N'Dama, Muturu and Zebu production traits.

Trait	Muturu	N'Dama x Zebu	Zebu
Age at 1 st calving (days)	635	684	761
Calving interval (days)	350	363	403
Weight at birth. Males (kg)	13.7	18.1	26.5
Females (kg)	13.9	15.9	22.7
Weight at 3 months. Males (kg)	38.9	54.6	78.0
Females (kg)	37.5	54.3	77.5
Weight at 6 months. Males (kg)	71.5	-	130.4
Females (kg)	61.5	92.1	28.6
Weight at 9 months. Males (kg)	98.1	119.3	178.2
Female (kg)	82.1	112.4	165.0
Weight at 12 months. Males (kg)	108.1	137.4	206.7
Females (kg)	93.5	124.6	193.2
Cow weight 1-2 years (kg)	109	181	242
3-4 years (kg)	167	252	323
5-6 years (kg)	204	275	374

Table 6. Productivity index for Keteku and Muturu under various environments.

	Muturu		Keteku
	Village (tsetse)	Station (tsetse free)	
Cow viability %	95	95	97.8
Calving rate	57	92.4	65
Calf viability to 1 year	85	90	95.8
Calf weight (kg/year)	80	91.5	140
Productivity index per cow pear year (kg)	36.8	72.3	87.2
Cow weight (kg)	150	177	295
Productivity index per 100 kg cow maintained per year (kg)	24.5	40.8	29.6

The Muturus have an important place in traditional culture and this affects their management and marketing. There is a strong spiritual attachment to the animals. To harm a Muturu was considered sacrilegious and would pressage ill for the perpetrator. They must not be roasted whole or in large pieces despite their small carcass yield as this is believed to be a humiliating experience for the

spirit of the sacred animal. A farmer who does this angers the gods and may lose all his cattle unless he appeases appropriate deities.

Muturus have special protection and can wander freely in the fields and destroy crops with impunity. Even Christians tend to observe these restrictions in that Muturus are regarded as untouchable animals.



Figure 4. Coloured variants among Muturu breed.

Productivity

The Muturu traits have been evaluated in a communal management system in some states (Table 4). This system has been largely responsible for the conservation of the Muturu (Robert and Cray, 1973). Under the system, cattle belonging to various owners in a village are herded together. The system was developed to minimize damage to crops by these cattle and prevent conflict between farmers and cattle owners. Whilst the calving rate in this village system is 57 percent, it was as high as 92 percent when tsetse was controlled in the station environment (Table 5). Compared to the Zebu or the Zebu cross, the Muturu calved earlier, 635 days compared to 761 and 684 days of Zebu and Zebu cross, had calving intervals of 350 days

compared to 403 and 363 of the others, respectively, though the cows' weight was much lower at maturity (three-four years), 167 kg compared to 323 and 252 kg of the Zebu and the N'Dama x Zebu Cross.

Anatomical differences between male and female Muturu were similarly reported in various field station conditions (Olutogun, 1976, Akinwunmi and Ikpi, 1985). The Muturu cattle are reportedly very fertile with a capacity to produce one viable calf per annum (Oyenuga 1967; ILCA 1979a; Adeniji, 1985). They mature earlier than the Zebu in the region and the intervals between consecutive calvings were shorter. Under improved management it was reported to be between 10-15 months and 18-24 months under the traditional village system.

Table 7. Body measurements of Muturu 4 years old bulls.

	Muturu ^(a)	N'Dama ^(b)
Height at wither (cm)	86.43 – 112.63	93 – 120
Heart girth (cm)	103.79 – 118.73	109-162
Rear Flank girth (cm)	106.79 – 120.51	-
Circumference of pouch (cm)	125.55 – 135.62	-
Circumference of canon (cm)	10.53 – 10.85	-
Circumference of neck (cm)	51.91 – 53.90	51 – 54
Circumference of hind legs (cm)	38.05 – 45.55	35 – 43
Body length (cm)	111.76 - 161.56	128 – 172

Source: ^(a) Oloruntobi, 1994;

^(b) Sokefun, 1994.

Milk Production

The Muturus are rarely milked because their milk production is hardly sufficient for their calves. Milking by the Koma people of Gongola State was done for medicinal purposes. However, lactation milk yields of 127-421 kg for lactation length of 120-216 days were reported (Olaloku, 1976; Fricke 1979).

Productivity Index

Productivity indices of the Muturu in different production environments characterized by light and zero tsetse challenge are shown in Table 6. The animals under a tsetse free environment were found to perform better than those in a tsetse infested environment even under improved management. The productivity index varied from 36.8-72.3 under the two systems.

Characterization

Morphometric characterization of the Muturu breed revealed colour shades of ebony black, fawn, black and white, black with white patches, white with brown or black spots of varying frequencies ranging from 39-90 percent, 62 percent of the population studied were predominantly black, which corresponds to ecological adaptation of the animal in the south of the country where it is

highly distributed (Oloruntobi, 1994); the lighter shades occurring more among the Northern varieties.

Body measurements as reported by some authors are presented in Table 7. When compared to that of N'Dama, the height at wither ranged from 86-113 cm compared to 93-120 cm of the N'Dama whilst the body length varied from 112-161.6 cm compared to 128-172 cm of the N'Dama, hence, Sokefun (1994), Fall, *et. al.* (1992) showed Muturu as a small bodied compact animal with fine-boned limbs.

Conclusion

The Muturu cattle is the only native shorthorn cattle in Nigeria, the N'Dama having been imported to upgrade Nigerian Zebu for beef production and confirmation of trypanotolerance on the trypanosusceptible breed.

Available reports have pointed to the fact that the Muturu is a highly endangered breed as a result of:

1. Civil strife in Nigeria.
2. Reduction in the habitat of tsetse fly through increase cropping hence they are being replaced by the bigger bodied Zebu even in areas where they are considered as sacred.
3. Extensive crossing with the Zebu in tsetse fly areas resulting in its genetic dilution.
4. Urbanization.

Hence survival has been restricted to pockets of savannah and the humid forest zone. With a decline in tradition and destruction of shrines as urbanization continues and the current spread of Christianity, many of the Muturu population will be further drastically reduced if nothing is urgently done about its conservation.

References

- Adeniji, K.O.** 1985. Review of endangered cattle breeds of Africa in Animal Genetic Resources in Africa: high potential and endangered livestock. 2nd OAU Expert Committee meeting on Animal Genetic Resources in Africa, 24-28 November 1983 Bulawayo of Zimbabwe Nairobi Kenya O.A.U/STRC/IBAR, 20-32.
- Akinwunmi, K.A. & Ikpi, A.E.** 1985. Trypanotolerant cattle production in Southern Nigeria. Report to International Livestock Centre for Africa (ILCA). Humid Zone Programme, Ibadan, Nigeria. Addis Ababa, Ethiopia ILCA, 31 pp.
- Epstein, H.** 1971. The origin of the domestic animals of Africa, Vol. 4, New York, USA Pub. Africana.
- Fall, A., Diop, M., Sanford, J., Wisseque, Y.J., Durkin, J. & Trail, J.C.M.** 1982. Evaluation of the productivities of the Djallonke Sheep and N'Dama cattle at the Centre de recherches Zoo techniques de Kolda Senegal ILCA Research report 3, Addis Ababa, Ethiopia, 70 pp.
- FAO.** 1980. Trypanotolerant Livestock in West Africa, Vols. 1 & 2.
- Ferguson, W.** 1967. Muturu cattle of Western Nigeria. J. West African Sci. Asso. 12, 37-44.
- Fricke, W.** 1979. Cattle husbandry in Nigeria, a study of its ecological conditions and social geographical differentiations. Heidelberger Geographische Arbeiten Geographischen Institute der Universität Heidelberg, 330 pp.
- ILCA.** 1979a. Trypanotolerant Livestock in West and Central Africa Vol. 1. Country Studies International Livestock Centre for Africa. ILCA Mono 2, Addis Ababa, Ethiopia, ILCA, 148 pp.
- ILCA.** 1979b. Trypanotolerant Livestock in West and Central Africa Vol. 2. Country Studies International Livestock Centre for Africa. ILCA No. 2 Addis Ababa, Ethiopia, 303 pp.
- Mason, I.L.** 1988. A world dictionary of livestock breed types and varieties. 3rd Ed. Wallingford, UK, CAB International, 348 pp.
- Olaloku, E.A.** 1976. Milk production in West Africa: Objectives and Research approaches. J. Ass. Adv. Agric. Sci. Africa (AAASA) 3: 5-13 pp.
- Olorunfemi, I.A.** 1994. Management system and the body dimension characteristic of the Muturu in Southern Nigeria. M.Sc. Thesis, University of Ibadan, Nigeria.
- Olutogun, O.** 1976. Reproductive performance and growth of N'Dama and Keteku cattle under rearing conditions in Guinea Savana of Nigeria. Ph.D. Thesis, University of Ibadan, Nigeria.
- Oyenuga, V.A.** 1967. Agriculture in Nigeria. Rome FAO, 308 pp.
- RIM.** 1992. Nigerian Livestock Resources Vol. II. National Synthesis. Report by Resource Inventory and Management Limited (RIM) to Fed. Dept. of Livestock and Pest Control Services, Abuja, Nigeria.

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Roberts, C.J. & Gray, A.R. 1973. Studies on trypanosome resistant cattle, breeding performance of the N'Dama, Muturu and Zebu maintained under the same conditions of husbandry. *Trop. Anim. Health Production* 5: 211-219.

Shaw, A.P.M. & Hoste, C.H. 1987. Trypanotolerant cattle and livestock development in West and Central Africa. FAO. Animal Productions Health Paper No. 67/2.

Shaw, A. 1985. Consultation Mission on Trypanotolerant livestock and multiplication of trypanotolerant livestock. FAO Project ECP (RAF) 190/17A Ouagadougou, Burkina Faso.

Sokefun, O.B. 1994. Management Practices and Morphometrics of N'Dama in Southern Nigeria. M.Sc. Thesis, University of Ibadan, Nigeria.