

SUDANESE CATTLE RESOURCES AND THEIR PRODUCTIVITY. A REVIEW

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ABSTRACT

Sudan possesses large population of cattle in Africa. Sudanese cattle are broadly classified into two breeds: Nilotic cattle and North Sudan Zebu cattle. Types that are related to North Sudan Zebu cattle include: Kenana, Butana (Rofaah), White Nile, Western Sudan Baggara, Foja (Dar Al-Reeh cattle), Qash cattle (Baraka cattle), Arashie cattle, Red Um Bororo, Ingessana cattle and Sudanese Fulani. Kenana and Butana possess good potential for milk production in comparison with the other ecotypes of North Sudan Zebu and Nilotic cattle breed. Mean lactation milk yield of Kenana cows is 1836±186 litre in mean lactation length of 308±6 days. The maximum yield of Butana cows in 330 days was 3012 litre. Nilotic cattle are very poor milkers probably for genetic reasons. Judged by international standards milk production potential of most indigenous Sudanese cattle is sub-optimal.

INTRODUCTION

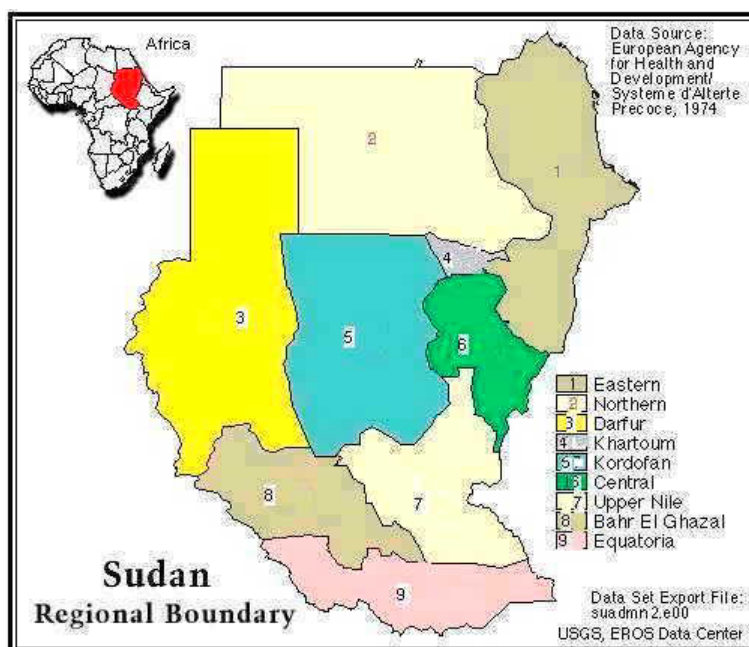
Sudan ranks first in cattle population in Africa (FAO, 2002). Total Sudan cattle population in 2001 was 38.325 million heads. About 29.7% of Sudan cattle population is in Southern Sudan. Unfortunately, contribution of Southern Sudan cattle to export trade in live cattle is negligible (Hamid, 2004). Darfur and Kordofan accommodate two thirds of North Sudan Zebu cattle and around 40% of Sudan's cattle population. These two regions are the main players in the live cattle and beef export trade of Sudan. The middle region (comprising the central clay plain) is the home of 27% of Sudan's cattle. Eastern and Northern regions of the Sudan accommodate 3.6% and 3% of Sudanese cattle, respectively.

Cattle Breeds

Sudanese cattle belong to the species *Bos indicus* which includes humped cattle (Zebu) of Asia and Africa. Sudanese cattle are broadly classified into two breeds: Nilotic cattle and North Sudan Zebu cattle (Joshi *et al.*, 1951). Nilotic cattle have long horns and small hump and originated from interbreeding between Hamitic longhorn and the Indian Zebu. Northern Sudan Zebu cattle vary in size depending on environmental conditions but are larger than Nilotic cattle. Sudanese cattle are distributed as follows:

1. Kenana cattle are found along the banks of the Blue Nile. Coat colour is white to grey and tends to get darker at the head and feet. The udder is slightly yellowish in colour; and the distinctive white grey skin colour is stronger in males than females. Mature Kenana bulls and cows may weigh over 500 kg and around 400 kg, respectively.
2. Butana cattle are found between Blue Nile and River Attbarah. They are red in colour and slightly dark red at the extremities. Butana cattle are one of the heaviest Sudanese cattle breeds and are kept for milk production.
3. White Nile cattle are found along the banks of the White Nile. They are mixtures of Western Sudan Baggara cattle and Kenana cattle. White Nile cattle display many colours.
4. Western Sudan Baggara cattle are found in Western Sudan in Kordofan and Darfur regions. Baggara cattle display variable coat colours and are given different names in different areas.
5. Arashie cattle are found in Qash delta, Blue Nile and Geziera.
6. Nuba cattle (Koalib) are found in western Nuba mountains. They are small and tolerant to trypanosomiasis. Coat colour is black but other colours may exist.

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7. Baladi cattle are nondescript and are widely distributed in different parts of Northern Sudan (Baladi 1, Baladi 2, Baladi 3 and Baladi 4)

8. The cattle of Southern Sudan are predominately Nilotic cattle. Several tribal types may be identified e.g., Murle cattle, Taposa cattle, Mongalla cattle, Anwak cattle and Nilotic Sanga cattle (Mason and Maule, 1960).

Live-weight growth

The mean weights of calves born to Western Sudan Baggara cows are 17.6, 29.4, 41.2, 58.9, 68.7 and 79.3 kg at birth, 1, 3, 6, 8 and 12 months of age, respectively. Thus, the overall average growth rate of calves during the first year of life was 169g/day which is exceptionally low (Payne, 1970). In a different study the mean birth weights of male Western Baggara, Kenana and Butana calves, under experimental conditions were 23.5, 25 and 24 kg, respectively. The corresponding values for females from the same types were 21.3, 23.2 and 22 kg, respectively (El Khidir et al., 1999).

Reproductive performance

The reproductive performance of Sudanese cattle maintained on natural grassland is impaired by seasonal fluctuations in the quantity and quality of feed in addition to stresses resulting from high environmental temperature, movement on hoof, diseases and interactions between the latter factors.

Kenana heifer calves that were maintained after weaning on high and low plane of nutrition were sexually mature at 23 months (308 kg live weight) and 40 months (243 kg live weight) of age, respectively. The corresponding values for Butana heifers that were subjected to similar treatments were 16 months (281 kg live weight) and 31 months (241 kg live weight) (Osman and Russel, 1974). Under good nutritional management Kenana and Western Sudan Baggara bull calves attained puberty at 15-20 and 22 months of age, respectively. Age at first calving depends on age at sexual maturation and age at first service. Ages at first calving ranging between

Butana cow with newborn calf



Kenana bull



Baggara cattle



Nilotic cattle



38.4 and 57 months were reported for Kenana heifers; and between 44 and 50.3 months for Butana heifers (Ageeb, 2002). Published estimates for length of period between first service to conception in Kenana and Butana cows were variable 115, 153, 111, 129 and 144 days. Long periods point up problems of too many services, inadequate detection of estrus, possible uterine infection or embryonic mortality. Calving intervals of 368, 395, 409, 412 and 433 days were reported for Kenana cows by various workers (Payne, 1970 and El Tahir, 2000).

Milk production

Milk from Baggara cows: Only a few reports could be found in the literature documenting lactation performance of Baggara cows under range conditions. Average lactation (12 months) yield of Baggara cows in Southern Kordofan was 356 litre and monthly yield varied between 19.2 and 40.4 litre. Milk yield of Western Sudan Baggara cows kept indoors

at a governmental research station ranged from 407 to 923 litre in 200-234 days (Payne, 1970).

Kenana and Butana possess good potential for milk production in comparison with the other ecotypes of North Sudan Zebu and Nilotic cattle breeds. Early studies conducted showed that the maximum lactation yield obtained from Kenana cows that were fed indoors was 2050 litre in 260 days. The maximum lactation yield recorded for Kenana cows at Un Benain and Nisheishiba Research Stations were 1721 and 1524 litre in 240 and 189 days, respectively. Relatively recent estimates, based on data from University of Khartoum Dairy Farm, for mean lactation milk yield of Kenana and Butana cows were 1836 ± 186 and 2264 ± 131 litre in mean lactation length of 308 ± 6 and 283 ± 11 days, respectively (Medani, 2003). The maximum yield of Butana cows in 330 days was 3012 litre.

Nilotic cattle were very poor milkers probably for genetic reasons. A lactation milk yield of 1003 litre in 263 days was reported for Nilotic cows managed indoors. Milk yield of grazing cows was around 182 litre per annum and daily milk yield never exceeded 1.7 litre. Judged by international standards milk production potential of most indigenous Sudanese cattle is sub-optimal. Attempts have been made to upgrade milk yield of local cattle through crossing with purebred dairy cattle breeds such as Friesians. The results have shown that maximum lactation yield (4586 litre with 4.5% fat in 427days) was obtained from the crossbred cows (having 37.5% Kenana blood and 62.5% Friesian blood) (Ageeb, 2002).

CONCLUSION

Sudan has one of the largest and most species-diverse livestock population in Africa. It is considered to be one of the richest countries with regard to livestock population. In addition to the huge livestock base, the country has great wealth in wildlife, fish and poultry. However, despite the contribution and potential in the animal wealth of Sudan, still the livestock sector is crippled and lagging behind for so many reasons among which are: -

1. Traditional ways of husbandry and management of animal, as the majority of the

animal are concentrated in the hands of nomads.

2. Presence of diseases particularly tick-borne diseases and parasites leading to early culling of cattle.

3. Shortage of water and feeds in the areas of livestock particularly during the dry period of the summer.

4. Lack of proper scientific means of feeding animals, as most of the pasture and range plants are deficient in energy, vitamins and minerals.

5. Poor genetic make up of cattle, particularly dairy cows.

6. Poor veterinary services.

7. Lack of proper utilization of available agro-industrial by products such as by-products of sugar cane, sorghum, cotton. By-products are located in areas away from the reach of animals and the by-products are mostly bulky and require a lot of money and efforts for processing and handling. They also require special knowledge for treatment and supplementing the deficiencies in their nutrient value.

8. Problems of marketing and transporting the livestock prior to slaughter and export from Khartoum airport.

9. Lack of infrastructure such as research, extension, roads, education and health services.

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