DAIRY HERD TYPE, STRUCTURE, AND MANAGENIENT PRACTICFS IN THE GEZIEA SCHEME.

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SUMMARY

The study was conducted on l02 herds in the Barakat area of the Middle Region of' the Gezira Scheme in 1986 to classify the types of dairy animals. Kcnana, Butana and Cross - bred types accounted for 77.7,l2.7 and 9.6 % of the population , respectively. The typical herd structure was 59.0 'X, cows, l'l.9 'X , dry heifers, l l.l Z, heifer calves, 9.5% bull calves and 2.5 'Z bulls. Milking cows rcprcscntcd 20. 5% of the total ecws in the herd. Full - time farmers accounted for 72.9 'X, of the herd owners and 84.5% of the total were members of the Gezira Dairy Cooperative Society. Some 66.3 'Z, ofth: total milk from numbers farms was supplied to the Coop. In the study herds sheep and goats represented l6.l and l3.5% respectively.

INTRODUCTION

Many types of cattle exist in the Sudan, each adapted to the range of environment which prevail in n territory of nearly one million square miles. Bennett, John and Hewison (I954) classified these cattle into three main groups viz., Northern or Arab, Southern or Nilotic, and Nab: Mountain. Hewison {I94 5), Boynsi (I947), Alim (I960, I962) and Danasoury and Bnyoumi (X963) have discussed, the potentialities of Kenana and Butana as milk producers among the Northern cattle. Mt The'ddle_ Reaion of the Sudan is considered as the main area for these types. The primary objective of this study was to estimate and locate the types ofdairy cattle in the area, with particular reference to milk supply to the Gezirn dairy Cooperative. In

addition, information was sought on factors such as alternative outlets for milk supplies. sources of animal nutrition, stock management practices, and approach to calf rearing. Such information could be of value to policy planners who are interested in the scale of animal production within the economy of the Gezira Scheme and the potential cash return to the tenant. The main focus of the study was the Kenana and Butana types and the impact of crossing with exotic blood. lt was expected that the information would produce a map of their distribution and density which form a basis for future breeding and / or expansion programmes.

MATERIALS AND METHODS

The study was undertaken during May /October l986 in the Barakat area of the Gezira Scheme. It lies at latitude 14 24 N and longitude 33 29 E. the soil is a dark, cracking clay with pl-l 7.8 - 8.5. Cash crops (cotton, groundnut, and wheat) dominate the agricultural system, leaving an area for fodder production which is inadequete for the animal population in the area. Grain sorghum is widely grown for human consumption.

Fodder production has been neglected during the last two decades_leading to neglegance of animal production sector. There is a growing demand for animail products at present and a planned policy towards animal production is required.

The study was undertaken in Barakat area to collect information on animal types and husbandary practices. Individgl farrners and herd owners were interviewed on single day visits by team form the National Dairy Research Centre (N. D. R. C.) The interviews were conducted using a pre-tested questionnaire.

Thirty villages were studied but plans to include a further 22 villages were dropped due either to a lack of information or to the number of animals owned by the tenants.

The most important livestock species reared within the study area, cattle, sheep and goats. 102 herds of dairy cattle beside sheep and goat

were studied .

RESULTS AND DISCUSSION

Herd type and Structure

The distribution of cattle types in the study area is shown in table l. The Kenana is the predominant type in the area, accounting for 77. 7 % of the sample.

Table 1. Distribution of Kenana, Butana and Friesian Cross - bred animals in Barakat area.

Types	%Kenana	%Butana	%Cross-bred	Total%
Cows	41.2	10.8	7.0	59.0
Heifers	15.9	1.0	1.0	17.9
Heifer calves	9.6	0.5	1.0	11.1
Bull calves	9.0	0.3	0.2	9.5
Bulls	2.0	0.1	0.4	2 .5
Total	77.7	12.7	9.6	100.0

Cows were classified inte milking and dry cows ;Table 2 shows their distribution. Thc Kenana type clearly dominates both groups. The average herd had two out of every three cows Xlry which is a very high percentages ; this reflects poor management both in terms ofanimal nutrition and fertility control.

Tablr 2. Distribution of milking and dry cows by type.

Type	Milking%	Dry%	Total%
Kenana	15.2	26.0	41.2
Butana	2.8	8.0	10.8
Cross - bred	2.5	4.5	7.0
Total	20.5	38.5	59.0

The establishment nfan A. I. centre at Barakat in 1968 commenced the introduction ofcross - breeding. The lack ofa major impact on cross-breeding strategy is evident front the low percentage of cross - bred animals shown in table 3; 50% cross 4 brads amount to 5.8 °/,, and 25 'Z, cross - breds represent 3.5 'X, of animals in the area. The quarter crosses were obtained by using half corss - bred bulls on local cows or by mating local bulls to half cross- bred cows. The absence of any national breeding policy meant that cross breeding is carried nut traditionaly and to date has not been successful in establishing any significant number of cross bred cows.

Table 3. Distribution of Friesian Cross - bred animals.

Types	Percentage of cross - bred					Total
	25%	50%	62.5%	75%	100%	
Cows	1.8	5.1	0.0	0.05	0.0	6.95
Heifers	0.9	0.3	0.05	0.0	0.0	1.25
Heifer calves	0.6	0.3	0.0	0.07	0.0	0.97
Bull calves	0.2	0.6	0.0	0.0	0.0	0.20
Bulls	0.0	0.1	0.0	0.05	0.2	0.35
Total	3.5	5.8	0.05	0.17	0.2	9.72

Calf Recring

Suckle crlvgs are scperated from their dams at milking times when each calf is allowed to sutklc two quarters only. Osman and Rizgalla (1968) described this practice in the Western Baggara type of cattle which are found in other areas of the Sudan. ln Barakat area 63. 3 % of the calves were recorded as being allowed tc Suckle (‘tiring milking time.The remaining calves were left to their dams after milking without any guarantee that the rrsidual milk in theudder would meet their nutritional requirement. This situation may be more sensitive in the Gezira where cows are usually milked only once a day, either early in the morning or late in the afternoon.

Hard Owarces

The finding of this study indicated that 72.9 ‘X, of the herd owners are farmers in the Gezira Scheme, 15.6% work in the private sector, 5.6% are government cmployccs and l. 9 % are classified as animtl breeders.

Formerly, mcst 1 f the farmers kept livestock to satisfy the family demand for animal products. The establishment of the Gezira dairy Coop in I980 at Barakat changed the traditional pattern of milk supply. Currently 84. 4% of herd owners in the barakat area are members of the Gezira Dairy Coop.

Milk Trisection

During the period of the study the per-eentage of milking cows as follows :

15.2% Kcizann, 2.8% Butana and 2.5% Cross - bred. From an analysis of the ecords Kenana cows produce 74.0 % of the total milk in the area whilst the Butana and C rcss - lzrcd cows produce l3.6% and 12.3% respectively. Average milk production was 3. 8 kg per cow per day. Utilization of total milk was : 66.3 % Delivered to Gezira Dairy Coop, 27.1% retained for family

use and 6. 6% was sold privately in the village or nearest town.

Herd Manegment

ln the Gezira herd management depends traditionally on maintaining the livestock on crop residues from cotton, wheat, groundnut and sorghum addition canal bank"grazing of native grasses supplies signficant quantities of herbage to animals herding starts early in the morning (around 07. 00 a.m.) grazing contiucs lhrcughcut the day, and the animals are brought back to the villages late in the M < ir rc n (:1: u"d7.(0 p.m.). Most ofthe animals are kept in open spaces or zeribzs(made from Acacia branches) without any shade. This type of enclosure was used for 85.5 ‘Z, ofall animals in the area_ 11.3 ‘X, were kept in open yards and 3,0 % were kept in closed yards. The absence of shade and free access to drinking v\ atrr 1 fit-is fcrcl intake “hit h reduce milk production of cows and restricts growth rates cf replacement stock.

In addition to the crop residues some farmers feed gassab(sorghum stover).

Cc nccntrates e. g. groundnut cake, cotton seed cake and wheat bran (radda), and gun fodder Abu 70 (sorghum vulgaris _) and,/or Pioneer 988 sorghum X Sudan grass hybrid.

Table 4 : how’s the percentage of tenants and the level of their dependence on the different feed supplies, either home~ produced or purchased from the market.

Table 4. feedstuff category and % tenant utilization.

Feedstuff	% tenants
Cassab (sorghum straw)	22.9
Wheat straw	9.6
Groundnut hay	9.1
Bagasse (Sugercane)	0.2
Molasses	8.9
Undecorticated cottonseed	5.6
Groundnut cake	12.8
Cottonseed cake	16.2
Wheatbran	12.8
Green fodder (grass and / or legume)	2.4

Small Ruminants

Sheep cud gvats dominate the other types of animal> found within the Gezira Scheme livestock production system. The present study also focussed on the numbers of other ruminant species owned by dairy farmers The results reflect the efforts of all cattle owners to keep small ruminants to satisfy the family dema nds for milk. meat and by - products. The typical tenant's herd comprised 70.6% cattle, l6.l% sheep and 13. 3% goats.

Genera! D;s<nssion and Recommendation

In the Cezira high population are not accompanied by high productivity This is reflected in the herd composition.Productivity parameters demonstrated that cattle herds within the Scheme were heavily imbalanced in favour of females, which accounted for about 88% of the animals examined. This proportion is 8 % higher than that reported by the Gezira Livestock Integration study team(l986), and I8 'X, higher than that found in many pastoral systems of Sahelian Africa. As a result, many owners expressed their needs for assistance to improve their breeding stock. Cattle densities are similar to those found in similar ecological conditions in Africa, such as the lnlands X1 ger Delta of Mali as reported by Gezira Livestock Integration study (I986).

Livestock ownership patterns is essential to the understanding of production systems. The herd size (approximately 3 - 5 cows) found in the studied area support the finding reported by Gezira Livestock Integration study(1986), and support its report that Gezira could only support 18% of

its livestock population on permanent basis.

An important consequence of these findings, from the point of view of livestock development , is that any marked improvent in the Scheme's capacity to sustain livestock through additional feed supplies, for example, by increasing fodder production, is likely to result in a major and permanent recall of resident animals. The method and pace ofre-introduction of irrigated fodder could become a powerful tool in shaping the future course of livestock development in the Gezira Scheme. Change in research strategy with emphasis on system approach to practical problems is expected to have an impact on future development of livestock production in the Gezira .

ACKNOWLEDGMENT

I wish to thank my collagues Dr. M. M. Ghasm El Seed and Dr. O. Y. Osman for their assistance with fieldwork.I am also gratful to the Sudan - Ireta d Development Cooperation Programme who provided the funding for this study.

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