SLAUGHTER OF THE SINGLE-HUMPED CAMEL *(Camelus dromedarius)* FOR MEAT AT THE SOKOTO ABATTOIR, NIGERIA.

A.M. ATAJA and O.J. UKO

Faculty of Veterinary Medicine, Usman Danfodio University, Sokoto - Nigeria.

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Daily records on camels (Camelus dromedarius) slaughtered for meat at the Sokoto abattoir in Nigeria, were collected for a period of 12 months (January to December 1992) and analysed to determine the rate and seasonal trend in slaughter and to acertain the accompanying fetal wastage. There was no significant (P>.01) seasonal variation in the number of camels slaughtered. A total of 3798 camels (estimated carcass yield of about 1077.7t of camel meat) were slaughtered during the period under investigation. One thousand, six hundred and seventy-seven (44.2%) of the camels sluaghtered were males whilst 2121 (55.8) were females. Of the female animals slaughtered, 522 (24.06%) were pregnant.

Key Words; Camel; meat; fetus.

INTRODUCTION

In the past camels were used primarily for the transport of people and merchandise in deserts and semi-arid areas. Motorized transport is now rapidly replacing camels in most desert regions so that unless a new role is created for the camel there will be an inevitable decline in their numbers. Leupold (1968) stated that the only safe future for the dromedary was as a meat animal. Camel meat is rarely consumed among the camel herders of Africa as this is considered a luxury (Mukasa-Mugerwa, 1981). There are however, reports on trade in camels for slaughter in Kenya, Ethiopia, Sudan and Somalia (Williamson and Payne, 1978); slaughter and meat consumption in Egypt (Alim, 1976) and in northern Nigeria (Dada, 1978; Alaku and Mohammed, 1991). Despite the increase in camel meat consumption there are few reports of efforts to breed and select the camel for meat characteristics in Africa (Mukasa-Mugerwa, 1981). Alim (1976), reported that in Egypt, indigenous camel population declined by 37.7% between 1967 and 1974. The decline coincided with an increase in camel slaughter figures by 20.8% in 1973 and 1974, during which time the contribution of camel meat to domestic meat supplies rose by 21.4%. Djellouli and Saint-Martin (1992) also reported that the population of the dromedary in Tunisia declined by 43.3% between 1981 and 1986. Similar trend in camel population in Nigeria is assumed, since it is known that slaughter of camels for meat is on the increase (Ochanan; personal communication). The objective of the present study is to highlight the dangers in continued depopulation of the camel through slaughter for meat and the associated massive fetal wastage without corresponding breeding and production programmes to sustain the camel population in northern Nigeria.

MATERIALS AND METHODS

Records of the daily slaughter of the dromedary camel (Camelus dromedarius) at the Sokoto abattoir from January to December 1992 were kept and used for this study. For the purpose of the study, the year was divided into three seasons, namely; Hot-dry (February to June), Wet (July to September) and Cold-dry (October to January) season.

All data were subjected to Analysis of variance (Steel and Torrie, 1980). Means for the seasons of slaughter and the two sexes were compared to determine if there were significant differences among them using Duncan's New MultipleRange Test (Steel and Torrie, 1980). Fetuses encountered in slaughtered female camels were calculated as percentage of the total females slaughtered for the year. The

carcass yield was estimated using the method described by Alaku and Mohammed (1991), and the economic loss due to the slaughter of pregnant females was estimated as described by Ribadu (1988).

RESULTS AND DISCUSSION

A total of 3798 camels representing about 1077.7t carcass yield were slaughtered between January and December 1992 at the Sokoto abattoir (Table 1). The number of animals slaughtered per month were similar for all months except during November and December when there was a sharp increase in the number of camels slaughtered. This may be due to the general increase in meat demand by consumers during the festive Christmas season. Of the total camels slaughtered, the female animals wre 2121 (55.8%) and were significantly greater ($P<.01$) than the males, 1677 (44.2%). This was in agreement with the observations of Wilson (1986), that 68% of cattle, 76% of sheep and 54% of goats slaughtered at the Niono abattoir in Mali between 1979 and 1980 were females. He attributed the greater number of females slaughtered to the much greater demand for male animals for export in the case of cattle and sheep and also to the demand for work ox. The latter reason may explain the observation made in the present study. Williamson and Payne (1978), stated that females and the entire male camels are used for work, but castrated males make the best workers.

The season of the year did not have any significant effect ($P>.01$) on the number of animals slaughtered (Table 2). It is not known what proportion of the camels slaughtered in Nigeria actually originate from Nigeria or from the neighbouring countries such as Cameroon, Chad and Niger. It is however known that during the dry seasons and under drought conditions much of the livestock slaughtered in Nigeria actually originate from these neighbouring countries (Alaku and Mohammed, 1991). The present study has shown that the seasonal migration of camels into Nigeria from the neighbouring countries did not affect the rate of slaughter of camels at the Sokoto abattoir from season to season. The slaughter of male camels was higher ($P<,.01$) during the cold- dry than during the wet season. This may be explained by a greater demand for work animals during the wet (planting) season and culling of old and sometimes injured and sick animals for slaughter during the dry season when the demand for work animals is less.

Fetuses recovered, expressed as percentage of female camels slaughtered on monthly basis is shown in Figure 1. The monthly percent of slaughtered pregnant camels range between 19.1 and 34.6 with the annual mean percent of $24.6 + 1.64$. This figure may be an underestimate since it was based on the number of fetuses recovered. It is possible that pregnancies at very early stages were not recorded. The smallest fetus recovered was about 20- 25cm in length, which would be between 3.5-4 months old (Mukasa- Mugerwa, 1981). The percentage pregnancy recorded in the present study was higher than the 13% recorded by Alaku and Mohammed (1991) for the period of 1989 in Maiduguri, but was lower than 45.5, 50.9, 70.1 and 49.6% reported by Shalash and Nawito (1964), Ojo et al (1977), Musa (1979) and Ribadu (198), respectively. The destruction of fetuses in the slaughtering of pregnant animals is forbidden by law in nearly all countries of the world (ECA Technical Publication 1988). Apart from the huge economic loss that results from this criminal act, the continued slaughter of pregnant females would put camel on the list of endangered species. The economic loss over a ten-year period from the slaughter of 4500 pregnant camels at Kano abattoir in a single year was estimated to be over six million Naira (N6,075,000.00), Ribadu (1988). Similarly, the estimated economic loss over a ten-year period of slaughtering 522 pregnant camels at the Sokoto abattoir in a year would run into almost one million Naira. Camels are fairly extensively used for meat in northern Nigeria (Makasa-Mugerwa 1981). Given the economic loss estimates from only two abattoirs above, the loss from the slaughter of pregnant camels in

the whole of the region would be colossal. Given the important role camels are required to play in supplementing protein of animal origin in the diets of Nigerians, there is an urgent need to reduce and possibly stop this huge waste in camel industry. The high fetal wastage associated with the slaughter of pregnant camels is due mainly to lack of rountine ante-mortem preganancy diagnosis at our abattoirs. Until recently the only reliable method of preganancy diagnosis was by palpation of the camel's genital organs per rectum (Barmintev 1951; Musa and Abusineina 1976).

Now however, more sensitive techniques such as ultrasonic scanning of the genitalia and estimation of blood progesterone levels are also available (Arthur 1992). Since the law forbids the slaughter of pregnant animals, efforts must be made to enforce the law to curb this terrible practice. Government should develop incentives for the retention of pregnant animals by their owners, butchers or private enterprises. As suggested by Alaku and Mohammed (1991), animal production programmes in the Colleges of Agriculture and related Faculties in the sudano- sahelian ecosystem of northern Nigeria be developed to include studies in camel husbandry and production. Research projects in the field of camel studies and breeding should be encouraged to provide the basic information to facilitate the take-off of camel industry in Nigeria. At present unfortunately, there is no planned camel management or production programme anywhere in the country. The most recent animal head-count figures published by the Federal Department of Livestock and Pest Control Services (FLD 1990) did not include any information on camel production; an indication that we really do not know the number of camels available in Nigeria. Planning for any camel improvement programme is almost impossible without this basic information.

As in many countries that contain arid zones, camel breeding is a means of utilising unproductive areas of land. We have to capitalize on this to effectively harvest our unproductive arid lands and also start a development programme of our camel industry as practiced in India (Khanna et al. 1992). Prudent camel management programmes and stringent pregnancy diagnosis at our abattoir would lead to the availability of more camels for meat and a drastic reduction in economic loss due to the slaughter of pregnant camels in Nigeria

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TABLE 1. Monthly and annual slaughter of Camels at the Sokoto abattoir in 1992.

Month	Males	Females	Total
January	140	177	317
February	135	142	277
March	144	151	295
April	144	145	289
May	148	184	332
June	140	172	312
July	113	186	299
August	119	181	300
September	129	172	301
October	147	162	309
November	161	231	392
December	157	218	375
Total	**1677**	**2121**	**3798**

TABLE 2. Mean seasonal slaughter of Camels at the Sokoto abattoir in 1992.

Camels	Seasons			SE
	Hot-dry	Wet	Cold-dry	
Both sexes	301.2[a]	300.3[a]	348.3[a]	16.16
Males	142.2[ab]	120.3[a]	151 3[b]	4.31
Females	158.8[b]	179.7[b]	197.0[b]	13.15

a,b Means within the same row bearing different superscripts differ (P <,0.1).