



MENACES IN MANAGEMENT PRACTICES, PROCESSING AND TRANSPORTATION OF MEAT IN THE SEMI ARID OF KANO METROPOLIS ABATTOIRS

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Abstract

The study was conducted at Kano abattoirs/slaughter slabs to determine and evaluate the management practices, meat processing techniques/handling and conveyance of the meat to various points of sale in the metropolis. A structured questionnaire and visual inspection were adopted. It covered a period of three months (December, 2017 - February, 2018). The results showed that goat, sheep, cattle, and camel are the animals usually slaughtered. A total of 54.33% goats, 23.87% sheep, 14.24% cattle and 7.46% camels were slaughtered. There were menaces in abattoir practices such as absence and improper use of lairage and antemortem examination, rough control of animals, unhygienic practices and brutality to fetal losses. Others include insufficient postmortem examinations on the slaughtered animals, and brutal attitudes of the animal owners. The commendable abattoir practices include method of cutting-up and byproduct processing. The finding of the present study showed that the meat carrying equipment are not wash regularly. The most means of meat transportation within the abattoirs are carrying on shoulder/head by pan (18.18%) or by wheelbarrow (9.09%), then the butchers convey the meat on motorcycle (30.91%), tricycles (34.55%), as well as use of few meat vans and taxis (7.27%) under very unhygienic conditions. Hence, more veterinarians, para-veterinarians and environmental health workers should be employed. People should be enlightened through media on meat hygiene and sanitary measures. Legislation prohibiting selling of unhygienic meat should be enforced, and modern means of transportation should be provided.

Key words: Abattoir Management Practices; Meat Processing; Meat products; Head-pan; Wheel-barrow

Introduction

Satisfactory meat handling practices in Nigeria at thousands of village and town slaughter slabs are almost absent. The production, distribution and marketing of good quality raw and processed meat and meat products are the major preoccupation of the meat industry. Edible meat from small and large ruminants slaughtered at various abattoirs remains the major meat consumed and source of protein for the Nigerian populace (Ademola, 2010). However, the most important issue in all meat-processing plants is maintenance of proper hygiene and adequate sanitary conditions (Adeyemo, 2002). The handling of meat in Nigeria is generally unsatisfactory attributable to the fact that slaughtering is generally carried out on the floor and outside the abattoir by butchers; whose knowledge of hygiene is low, while slaughtering and processing facilities are inadequate (Lawan *et al.*, 2013). Ideally, meat hygiene services are functions in such a way as to satisfy consumers and at the same time safeguard public health and animal hygiene (Kebede, 2010). The abattoir design should be such that will ensure correct sequence of operation that encourages efficiency while discouraging contamination and cross-contamination (Igwe, 2000 and 2005). It is imperative that good sanitation is required in abattoir practice (Ikeme, 1990). Unlike in developing countries, these are easily achieved in developed countries (Dandago *et al.*, 2009). The major objective of this research is to investigate nuisances in management practices, processing and transportation of meat in Kano metropolis abattoirs in order to understand at what extent the above standard prescriptions have been attained in Nigeria.



Materials and Methods

Kano central, Yanawaki, Tudun Fulani and Bachirawa abattoirs were selected areas of the study. Kano is located between latitude 110N and longitude 140N, it has a landmass of about 43,000 Km² and fall under the semi-arid zone of the country (Nigeria). It has an average rainfall of 600mm-1000mm annually. The region has about 4-8 months of dry season, the maximum and minimum temperature are 33°C and 15-18°C respectively and fall down as low as 10°C during harmattan season. The relative humidity range between 20 and 40 respectively in January and rising to 60-80 in July. The experimental animals used were goat, sheep, cattle and camel. The data collection was carried out through questionnaire survey and visual inspection between December, 2017 to February, 2018.

Questionnaire survey and visual inspection

A structured questionnaire was used as sample materials and administered to veterinary health workers, meat transporters and butchers. A total of 180 respondents (60 questionnaires each for veterinary health workers, meat transporters and butchers, respectively) were distributed within Kano state metropolis abattoirs. The procedure of visual inspection was done by regular two days visit a week early in the morning (6:00am – 10:00am) to abattoir over a period of 3- months. At slaughter houses, goat, sheep, cattle and camel were brought onto the slaughter slab continuously and their number was recorded. Other relevant information was collected through visual observation of operations; such as method of slaughter, evisceration, de-skinning and carcass cut operations. The questionnaires received and records collected from visual inspection were there after collated and analyzed using Microsoft Excel, 2016 (MS Excel).

Result and Discussion

The percentage of animals slaughtered at four Kano metropolis abattoirs and ranking are presented in Table 1. Within the period of this study, Kano central abattoir recorded highest animal slaughtered (71.59%), followed by Bachirawa abattoir (20.18%), then Yan'awaki abattoir (6.44%), while Tudun Fulani abattoir recorded the least (1.79%). In ranking of animal slaughtered Goats were highest (54.33%), followed by Sheep (23.87%), then Cattle (14.24%), while Camels recorded the least (7.46%).

Table 1. Percentage of animals slaughtered at four Kano metropolis Abattoirs and Ranking

Abattoir	% of Goat	% of Sheep	% of Cattle	% of Camel	% T.A.S.
Kano Central	67.65	58.12	95.99	96.99	71.59
Bachirawa	24.21	27.46	2.31	1.39	20.18
Yan'awaki	6.99	9.64	1.46	1.62	6.44
Tudun Fulani	1.15	4.78	0.24	0.00	1.79
Total	100	100	100	100	100
Ranking	54.33	23.87	14.24	7.46	100

%T.A.S. Percentage of total animals slaughtered. Source: Field survey December 2017 – February 2018

The outcomes of our result is similar with the findings of Lamidi et al. (2017) who worked at Trans-Amadi abattoir in Port Harcourt metropolis, Rivers State, Nigeria. They recorded highest percentage of animal slaughtered (68.26%) and goat had highest percentage (38.43%). However, in our result camel recorded the least animals slaughtered (1.79%), while their findings recorded pig (1.91%). This indicated that in both Northern and Southern part of the country people are consuming more number of small ruminant, suggesting livestock farmers to engage in small ruminant production for better economic return.

The respond of veterinarians, butchers and meat transporters on management practices, processing and transportation of meat at Kano abattoirs was harmonized and presented in Table 2. We observed that most of the abattoirs are under-staff. There is presence of liarage, though it is not properly used. The veterinary



workers are attending slaughter slab to check suspect animals and offer action for treatment or rejection. At the abattoirs, Halal is the method of slaughter and boreholes are the main source of water to clean meat for subsequent processing to whole sale cut; however, no standard modern vehicles for meat transportation. Gude et al. (2014) reported that few places in Nigeria accommodated the modernized means of transporting meat. Thus our result revealed similar findings of Lamidi et al. (2017) with few variations and information.

Table 2. Respond of Veterinarians (A), butchers (B) and meat transporters (C) on Management practices, processing and transportation of meat at Kano abattoirs

Categories	Variable	Frequency	Percentage (%)
(A) Lairage facilities	Yes	20	66.7
	No	10	33.3
	Regular visit to slaughter slab	Yes	25
		No	5
	Record of suspect animal /action	Treatment	10
		Rejection	20
	Method of slaughter	Stunning	0
		Halal	30
	Source of water	Borehole	25
		Tap water	0
(B) Sterilization of tools		Other sources	5
	Processing meat to wholesale cut	Yes	30
	Standard transportation vehicle	No	30
		Yes	10
		No	50
		Yes	60
		Yes	17.7
		No	83.3
		Yes	100
		No	100
(C) Means of transportation	Wheel/barrow	5	9.09
	Motorcycle	17	30.91
	Tricycle	19	34.55
	Car	4	7.27
	Carrying on shoulder/head	10	18.18
	Regular cleaning of vehicle	Yes	45
		No	15
	Meat spoilage due to uncleanness	Yes	50
		No	10
	Need of refrigerating van	Yes	40
(D) Need of Government intervention		No	20
		Yes	57
		No	3
		Yes	95
		No	5
		Yes	66.67
		No	33.33
		Yes	95
		No	5
		Yes	66.67
		No	33.33

Source: Field survey December 2017 – February 2018

We observed that the butchers were regularly attending the slaughter house and they are actively specialized in de-skinning, evisceration and other processing activities. Butchers were mostly not sterilizing their tools, probably due to their informal learning (of profession) at the abattoir. As we reported 83.3% of the respondents did not sterilized tools, it was 77.71% of the butchers did not sterilized their tools in Part Harcourt metropolis abattoirs, Southeast of Nigeria (Lamidi et al., 2017).

The mode of meat transport in the abattoirs were by carrying on shoulder/head-pan, wheel barrow, tricycles, motorcycles and few cars. Previously, Gude et al, (2014) reported that in Kano state, abattoir attendants were carry meat on their head using head pan from inside the abattoir and then to be trans loaded into either motor vehicles or motor/tri cycles respectively. However, Lamidi et al. (2017) reported that in South West