

Foetal wastage in food animals slaughtered at Nsukka Municipal abattoir, Nigeria

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Abstract

This study was conducted to evaluate foetal/pregnancy losses following slaughtering of food animals at Nsukka Municipal Abattoir Enugu State, Nigeria over a period of three months (April to June). The pregnancy status of each animal was determined tentatively by visual observation and by palpation of the exposed uterus after slaughtering. Attempts were made to recover embryos from dams with structures suggestive of pregnancy by flushing. Foetuses were recovered from slaughtered cattle, goats and pigs. The ages of recovered foetuses were determined and grouped according to the stage of gestation. A total of 2711 animals were slaughtered within the study period which comprised 1303 (48.06%) cattle, 756 (27.89%) pigs and 652 (24.05%) goats. The percentages of female animals slaughtered were 19.41, 49.74 and 91.26 for cattle, pigs and goats, respectively. Of these figures, 7.43%, 8.78% and 40.34% of cows, sows and does were pregnant, respectively. Similarly of the 78 uteri flushed, 4, 10 and 7 embryos were recovered from cattle, pigs and goats. The slaughtering of these pregnant animals resulted in loss of 605 foetuses; 417 goats, 174 pigs and 14 cattle, respectively. This amounts to possible economic losses of N5, 946,000.00 or \$37,396.23. Reasons advanced for slaughtering of these pregnant animals included financial needs, scarcity and or high cost of feed and ignorance of the physiological status of the animals. It was concluded from the study that to reduce foetal losses in Nsukka area, educating the farmers, provision of portable pregnancy diagnostic facilities and enforcing the law prohibiting slaughtering of pregnant animals are vital.

Keywords: Reproductive waste, meat inspection, slaughter, pregnant animal, Nigeria.

Introduction

Livestock production has been observed as being vital to the subsistence and economic developments in Africa where it provides year-round flow of essential food and non food products, sustain the employment and income of millions of people and contribute draught power and manure for crops (Rege, 1998). In rural areas, where there are no financial institutions, it represents a safe and durable form of storing wealth. Livestock products such as milk, hides and skin, wool, hoof and bones are raw

materials for industries.

Despite these contributions of livestock to the economies of developing countries, they are still being managed mainly in a traditional production system characterised by low level of inputs with subsequent low productivity. This poor management practices is often associated with high reproductive waste which include abortion and pre-weaning mortality (Maigandi *et al.*, 2001). Apart from problems of diseases, nutrition and poor management practices prevalent in many developing countries,

there is also the problem of inadequate meat inspection which has contributed in no small measure to indiscriminate slaughtering of pregnant animals (Garba *et al.*, 1992; Wosu and Dibua, 1992).

Sanusi *et al.* (2006) described wastage of conceptus through slaughter of pregnant animals as one of the most destructive practices man has ever used against his own production endeavour. This reproductive waste was earlier reported by Economic Commission for Africa (ECA) to be on the increase despite existence of laws prohibiting slaughter of pregnant animals in all countries of the world (ECA, 1988). According to Umar *et al.* (2006), early pregnancy diagnosis may not be possible under free range system of managing livestock which is a common practice in most developing countries. When this is combined with inadequate or no meat inspection at slaughter points/abattoirs, foetal wastage through slaughter of pregnant animals becomes inevitable. Notwithstanding the reasons that may be advanced by those involved, slaughter of pregnant food animals at any stage of pregnancy is unjustifiable.

In Nigeria, foetal wastage has been widely reported: in sheep and goats (Wosu and Dibua, 1992; Umar *et al.*, 2006), in cattle (Sanusi *et al.*, 2006) and camel (Bello *et al.*, 2008). The existence of these reports notwithstanding, there is scarce information on foetal wastage in the study area and Southeast Nigeria in general. Similarly, it is important to update the existing information with a view to creating awareness on the dangers of this destructive act of man. This study was therefore designed to document foetal losses incurred through slaughter of these domestic animals in the study area, identify possible factors that may be responsible and proffer solution(s).

Materials and methods

Study area

The study was conducted in Nsukka Local Government Municipal Abattoir; this is the only abattoir in the local government that comprises three other development centers. The local government is located in the derived savanna ecological zone and according to Nwanta *et al.* (2011), has a human population of about 309,633 that are mostly farmers.

Study design

The study was carried out through daily visit to the abattoir; 6 times per week for 12 weeks. The female reproductive tracts of the slaughtered animals were collected and examined for evidence of pregnancy as described by Bello *et al.* (2008). Ages of the foetuses recovered were determined and grouped according to the stage of pregnancy (pigs and goats) or in trimester (cattle).

To determine their ages, the methods of Arthur *et al.* (1982) for aging foetuses recovered at abattoir was used. This was collaborated with the use of some visible anatomical structures. Thus, for the purpose of this study, presence of cotyledons, membrane slips and caruncles were used to indicate the first stage of pregnancy in goats and pigs or first trimester in cattle, presence of hard hoof in all the limbs and hairs on the skin were used to indicate stage three or third trimester.

Reproductive waste was determined in individual species by expressing the foetuses recovered as percentage of the total female animals slaughtered (Bello *et al.*, 2008). Based on their willingness to be engaged in this study, structured questionnaires on the reasons for slaughtering of pregnant animals were administered to fifty veterinary personnel at the abattoir.

Statistical analysis

Data generated were analysed descriptively using SPSS version 15 and the results presented as percentages and Mean $\pm$ Standard Error of mean.

Results

A total of 2711 animals were slaughtered with a weekly mean of 54.33 ± 2.76 , 63.00 ± 2.35 and 108.58 ± 1.69 for goats, pigs and cattle respectively, (Table 1). Whereas all the cattle and goats slaughtered were indigenous breeds; mostly White Fulani and Red Sokoto, all the pigs were improved breeds. There was a significant variation among the different species. Hence the number of cattle and pigs slaughtered were significantly ($P = 0.05$) higher than goats; with the number of cattle observed to be approximately two times that of goats. The highest number of animals were slaughtered at the second week while the

least number of was recorded during the seventh week of study (Table 1).

Proportions of male to female food animals slaughtered during the study period showed that whereas more bulls (1061 Vs 242) and boars (380 Vs 376) were slaughtered, most of the goats slaughtered (91.26%) were females (Table 2).

Similarly, more than 45.00% of uteri from pigs with structures suggesting pregnancy had embryos (Table 3). Embryos recovered at different stages of organogenesis represented percentage recovery of 26.92, 45.45 and 20.00% for goats, pigs and cattle respectively, (Table 3). Aging of the foetuses/embryos recovered showed that 119 (28.00%), 276 (65.00%) and 29 (7.00%) from goats; 50 (27.00%), 112 (61.00%) and 22 (12.00%) from pigs were in their first, second and third stages of gestation, respectively. On the other hand, 15 foetuses (83.33%) recovered from cattle

Table 1: Number of animals slaughtered per week (April to June) at Nsukka urban abattoir.

Period (weeks)	Number of goats	Number of pigs	Number of cattle
1	61	73	114
2	72	81	122
3	45	67	106
4	52	57	111
5	45	60	111
6	59	63	104
7	37	60	107
8	46	63	102
9	60	61	108
10	58	54	107
11	59	51	100
12	58	66	111
Total	652	756	1303
Mean ($\pm$ SEM)	54.33 ± 2.76	63.00 ± 2.35	108.58 ± 1.69

Table 2: Proportion of male and female food animals slaughtered within April to June at Nsukka Municipal abattoir

	Goats		Pigs		Cattle	
	Male	Female	Male	Female	Male	Female
No. Slaughtered	57	595	380	376	1061	242
Percentage (%)	8.74	91.26	50.26	49.74	81.43	18.57
Weekly mean ($\pm$ SEM)	4.75 $\pm$ 0.62	49.58 $\pm$ 2.66	31.67 $\pm$ 1.48	31.33 $\pm$ 1.57	88.42 $\pm$ 1.98	20.17 $\pm$ 1.67

were at first trimester. The reproductive wastes were 70.08, 46.28 and 5.79% for goats, pigs and cattle, respectively.

Affirmative response to our questionnaires showed that 21 (42.00%) of the respondents sold pregnant animals due to financial needs, 12 (24.00%) sold as a result of scarcity, high cost of feed or both. Similarly, 8 (16.00%) were not aware of the pregnancy status of their livestock, 6 (12.00%) sold due to increased demand and 3 (6.00%) had no specific reasons. Other factor which could have contributed to the slaughter of pregnant animals from our observations was inadequate ante mortem inspection in the abattoir.

Discussion

The contributions of cattle, pigs and goats to the food chain, particularly quality meat to the people of Nsukka area have been attested to in this research judging from the number (2711) slaughtered within the study period of three only months. This study revealed that out of 595 does (91.26%), 376 sows (49.74%) and 242 cows (19.41%) slaughtered; 240 (40.34%), 33 (8.78%) and 18 (7.44%) were respectively pregnant. These translates to approximately 2 in every 5 does, 1 in every 11 sows and 1 in every 14 cows slaughtered.

Most of the animals slaughtered were within breeding age; there is no doubt that when animals in this age range are slaughtered, probability of foetal wastage will be high. The findings of this study may be an

indication that foetal wastage could be occurring in a massive scale particularly among goats at Nsukka Municipal Abattoir. This tends to reflect poor ante mortem inspection at the abattoir and is reminiscent to the findings by other studies (Wosu and Dibua, 1992; Bello *et al.*, 2008; Terzungwe and Danjuma, 2010) that proper ante mortem examination is lacking not only at the Nsukka Municipal Abattoir but indeed in many others across Nigeria.

Most of the goats slaughtered were Kano Brown or Red Sokoto breed. Midau *et al.* (2010) reported that Red Sokoto goats are normally managed under free range. Therefore, the high foetal waste we noted among them could be attributed to the traditional system of their management where breeding is not controlled. Similarly, in free range system, breeding records may be completely lacking thereby increasing the probability of selling off the pregnant ones. The high percentage of foetal wastage observed among the Red Sokoto goats over other goat breeds in this study lays credence to the reports on their population and distribution dynamics. Federal Livestock Department (FLD) reported that the Red Sokoto, Kano Brown or the Maradi goat is the most populated and has the widest spread of all goats in Nigeria (FLD, 1992). Our findings tend to suggest that the sex of animal slaughtered was a significant determinant of the level of foetal wastage recorded. A significantly ($P < 0.01$) higher

number of female goats compared to their pig and cattle counterparts were slaughtered. The reproductive wastage of 70.08% and 5.79% obtained for goats and cattle in this study underscores such relationship. This is in agreement with the findings of Idahor *et al.* (2009) and Addass *et al.* (2010) that foetal wastage in abattoir is highly associated with the sex of the animal slaughtered.

It was also observed that the number of pigs slaughtered was second to cattle and that all the pigs were improved breed, no crorel or indigenous breed was slaughtered within the period of study. The reason for this could be due to the fact Nsukka people relish pork and there is no cultural or religious barriers prohibiting rearing and consumption of pork in the area. This observation is reminiscent to the report of Omeke (1990) that pig farmers in Nsukka resorted to keeping improved breed in an attempt to meet local demand for pork.

This study observed no significant difference between the number of boars and sows slaughtered. The reason for this could be that whereas in goats, does of most breeds are bigger than bucks and are therefore valued higher; in pigs, there is

usually no significant difference between the weight of boar and sow of the same age and under similar condition. They therefore command the same market price.

Though pigs are multiparous animals, the reproductive waste of 46.28% was obtained. This figure was much lower than 70.80% obtained in goats and could be due to differences in management between the two animal species. Pigs are mostly managed intensively with males and females usually separated thereby controlling breeding. Other factor that could have contributed to high rate of slaughter of pregnant animals in this study is the season of the year. The study was carried out between the months of April to June.

This period coincides with late dry season when the rain is just about to begin in the Northern part of Nigeria where these breeds of goats and cattle are densely distributed (FLD, 1992). This period of the year is characterised by drought and hunger which expose animals to poor nutrition, diseases and possibly death. Therefore to forestall losses due to natural death or diseases, farmers prefer to sell their animals irrespective of their physiologic status.

Table 3: Proportion of pregnant and recovered foetuses/embryos of food animals slaughtered at Nsukka market abattoir within April to June

		Total number slaughtered	Pregnant slaughtered (%)	Recovered foetuses	Recovered embryos (%)
Does	Number	595	240 (40.34)	417	7 (26.92)
	Weekly mean	49.58 $\pm$ 2.66	20.00 $\pm$ 9.69	34.75 $\pm$ 2.22	0.58 $\pm$ 0.29
Sows	Number	376	33 (8.78)	174	10 (45.45)
	Weekly mean	31.33 $\pm$ 1.57	2.75 $\pm$ 0.45	14.50 $\pm$ 3.11	0.83 $\pm$ 0.39
Cows	Number	242	18 (7.44)	14	4 (20.00)
	Weekly mean	20.17 $\pm$ 1.67	1.50 $\pm$ 0.44	1.17 $\pm$ 0.42	0.33 $\pm$ 0.14

Similarly, our finding showed that more animals were sold within the first two weeks of study (Table 1). This corresponded to the festive season of Easter when the demand for meat is usually high in the study area.

The reproductive waste of 5.79% recorded for cattle is lower than 6.18% previously reported in Taraba State, Nigeria within the same period of the year (Terzungwe and Danjuma, 2010). This low incidence is encouraging and may be an indication that the people have started realizing the economic implications of slaughtering pregnant cows. However another important reason could be the fact that the skin of cattle is prepared into a special dish ('kpomo' or 'nkwobi') that is relished by its consumers in many parts of Nigeria including Nsukka area. Since male animals are sold at relatively earlier age (Addass *et al.*, 2010), their skin is more tender, easier to cook and therefore preferred by buyers.

This study revealed a staggering loss of 424 kids, 184 piglets and 18 calves of the future national herd. This would amount to a sum of N5, 946,000.00 or \$37,396.23. This is based on the fact that at the time of this investigation and within the study area, newly weaned kid, piglet or calf was sold at N4,000.00, N5,000.00 and N18,500.00, respectively and the exchange rate was N159.00 to \$1.00. This could be a colossal loss and a significant depletion of Nigerian gross domestic earnings. This observation is more serious since this data was generated from one location within a short period of three months.

Result from our questionnaire showed that farmers sold their pregnant animals as a result of financial needs, scarcity or high cost of feed, increased demand for meat and ignorance. This observation is in line with the reports of other researchers (Wosu and Dibua, 1992; Idahor *et al.*, 2009; Garba *et*

al., 2010) that financial demand to pay school fees or labour during farming season necessitates sales of livestock.

Our findings also revealed that lack of awareness on the importance of early pregnancy diagnosis, high cost of feed and improper ante mortem examination are among the major problems leading to foetal losses at Nsukka Local Government Municipal Abattoir. We recommend that farmers should be educated on the economic implications of slaughtering pregnant animals. Portable pregnancy diagnostic facilities should be provided at abattoirs across the nation and the law prohibiting slaughtering of pregnant animals should be enforced by relevant authorities.

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