



Foetal Wastage at the Oja-tuntun Slaughterhouse in Ogbomoso Town, South Western Nigeria: A Three Year Retrospective Study

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Authors' contributions

This work was carried out in collaboration among all authors. Author CEA designed the study, carried out the field work, wrote the protocol and performed the statistical analysis. Author EJA wrote the manuscript and managed the analyses of the study. Author AOO managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Aim: This survey was carried out to determine the prevalence of foetal wastage amongst cattle and goat; and its associated economic loss.

Study Design: A retrospective survey was carried out using the abattoir records of Owode Veterinary Hospital, Ogbomoso, were relevant data relating to foetal wastage was retrieved.

Place and Duration: The study was conducted in Ogbomoso, Oyo State, South-Western Nigeria from January 2014 to December 2016.

Methodology: A three year retrospective survey (January 2014 to December 2016) based on the Veterinary Hospital records were used to determine the extent of foetal wastage as well as associated economic loss.

Results: A total of 11,903 cattle comprising 8,482 (71.3%) males and 3,421 (28.7%) females; 1,269 goats comprising of 791 (62.3%) males and 78 (37.7%) females were slaughtered over the

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study period. A total of 244 fetuses (cows) and 55 fetuses (does) were recovered during the period of study with a calculated prevalence rate of 7.1 and 11.5% respectively. Analysis of the economic loss over the study period was estimated at approximately ₦25,254,000 (\$69,762) and ₦440,000 (\$1,215) for cattle and goats respectively. With a calculated average annual loss of ₦8,418,000 to foetal wastage which is too huge for any developing country.

Conclusion: Reoccurring slaughter of gravid females and its resultant high foetal wastage must be discouraged; so as to meet demand for meat and meat-related products as well as boost the nation's economy. Hence the need for all hands to be on deck to develop as well as implement local strategies aimed at reducing future economic losses.

Keywords: Foetal wastage; economic loss; meat-related products; animal husbandry.

1. INTRODUCTION

Animal husbandry has gradually found its way back into the lives of Nigerians; as majority now participate in livestock production as a source of quality animal protein as well as for its added economic benefits [1]. This sustenance farming might one day see the country retaining its place as the topmost producer of livestock in Africa. The primary purpose of livestock production includes food and job security; as well as the provision of raw materials for agro-industries [2,3]. Consequently, livestock production is a major contributor (5.1%) to the nation's gross domestic product (GDP) income [4].

Over the years, the upsurge in the world's population has not only produced an increase in the daily consumption of animal protein (eggs, meat, cheese, etc.), but also a corresponding increase in the demand of raw materials for the relevant agro-industries [5,6]. Hence, these increased demands for animal protein have not only created a consistent increase in the practice of livestock production but will most likely result in unethical behaviors on the part of the farmers [7].

Livestock production till date remains the means by which small scale farmers boost their incomes; where animals are sold for consumption, rituals, religious festivals and/or as experimental animals [8,9]. Research has established that at most times, animals are slaughtered without proper examination resulting in unplanned slaughter of pregnant and/or lactating animals [10,11].

Lack of equipment as well as the willingness to determine the pregnancy status of animals prior to slaughter remains a major challenge affecting livestock production in Nigeria [12,13]; not only are conventional non-breeding livestock slaughtered for human consumption but also

productive pregnant and lactating females in the bid to make extra income [14,15,16]. The slaughter of pregnant animals in Nigeria has been attributed to the lack of trained veterinary personnel; standard testing equipment/kits to ascertain the pregnancy status; poor record keeping during animal transfer and/or ignorance on the part of the farmers who want more economic benefits at all cost [17].

For proper economic management of livestock; the Food Safety Legislation demands that all female animals sent for slaughter should be reproductively inactive; and all information on the health and reproductive status of animals selected for slaughter should be evaluated continually [18,19]. However in developing countries, this is only possible through systematic ante-mortem inspection of all animals brought in for slaughter to avoid economic wastages.

All efforts towards the implementation of adopted international husbandry policies as well as strategic plans that guide decisions on animal health and food security nationwide has failed. The indiscriminate slaughter of pregnant animals, if left unchecked would ultimately result in the reduction of the general herd population; loss of dairy products, supply of poor quality meat and meat products to the general public as well as economic losses to the nation [20]. Hence, this study seeks to determine the prevalence of foetal wastage and the associated economic losses caused by the slaughter of pregnant ruminant animals at the Oja-tuntun slaughterhouse, in Ogbomoso town, Oyo State.

2. METHODOLOGY

2.1 Study Area

The study was carried out at the State Government owned slaughterhouse in Ogbomoso town; which is the second largest

Local Government Area in Oyo state, South-Western Nigeria. The Veterinary Control Post of the State's Ministry of Agriculture, Natural Resources and Rural Development receives animals from all over the country (mostly, from the North). It performs the twin obligation of epidemiological surveillance of livestock diseases and guaranteeing the fitness and quality of all animals prior to marketing and/or conveyance to the Oja-tuntun slaughterhouse. The choice of the study area was based on the importance attached to the facility for monitoring, evaluating and documentation of all husbandry related challenges that are present in an average Nigerian slaughterhouse.

2.2 Study Design, Duration, Population and Data Collection

A retrospective study design using the abattoir registers of the Owode Veterinary Hospital for a three years period (January 2014 to December 2016) was adopted and used for this study. Approval was obtained from the State's Ministry of Agriculture, Natural Resources and Rural Development, Ibadan prior to the onset of the study.

The study population comprised of all animals; cattle (predominantly, White Fulani) and goats (Kano brown, Sokoto red and the West African Dwarf) that passed through the Veterinary Control post and were slaughtered at the Oja-tuntun slaughterhouse within the study period. The primary data were obtained from direct post-mortem inspection of cattle and goat slaughtered daily at the Oja-tuntun slaughterhouse; while the secondary data were obtained from the monthly records of foetal wastages resulting from the indiscriminate slaughter of pregnant cows and does within the study period as obtained from the records of Owode Veterinary Hospital. Data collected include the total number of animals slaughtered, species of animals slaughtered, the number of foetuses recovered. Using the average cost of animal in the local market (adult cattle ranging from ₦98,000 - ₦109, 000 and goat from ₦6, 000 - ₦10, 000), the economic loss was calculated. The collected data were

analyzed using SPSS vs. 16 and presented using tables.

3. RESULTS AND DISCUSSION

A total of 11,903 cattle comprising of 8,482 (71.3%) males and 3,421 (28.7%) females; and 1,269 goats comprising of 791 (62.3%) males and 478 (37.7%) females were slaughtered over the study period. The highest annual slaughter rate for cattle and goats was recorded in 2014 and 2016 respectively. The result of the total number of animal species slaughtered during the period is presented in Table 1. The decreased consumption can be related to the recent security challenges (farmers-herder's crises, animal rustling and ethno-religious crises) [21,22] and economic recession that has affected livestock production and productivity in the country during the said study period.

Further analysis of the data showed that 244 foetuses and 55 foetuses were recovered from 3,421 cows and 478 does slaughtered respectively during the study period (Table 2). The above result demonstrated the extent of reproductive losses observed at the Oja-tuntun slaughterhouse. Although the proportion of pregnant animals slaughtered varied considerably over the study duration, the year 2016 had the highest number of loss for both cattle (108) and does (41). The percentage foetal loss revealed by the study in cattle (7.1%) and does (11.5%) was lower than the records of 9.2% [17]; 14.4% [23] and 22.4% [24] for cattle; and 40.7% [25]; 57.9% [26]; 26.1% [27] and 38% [28] for does.

With the extent of foetal wastage revealed, one cannot help but wonder if the overall wastage is as a result of poverty (where pregnant females are sold to ease the economic burden on the family); slaughtering of pregnant females for the purposes of festivals/ceremonies; disease outbreak; or the onset of dry season which is characterized by stress due to long distance animals have to trek in search of food and water thereby forcing farmers to disposed of pregnant females before they die naturally [17,19].

Table 1. Total number of animal species slaughtered during the study period

Animal species	2014		2015		2016		Total	
	Male	Female	Male	Female	Male	Female	Male (%)	Female (%)
Cattle	4,422	755	2,840	1,086	1,220	1,580	8,482 (71.3%)	3,421 (28.7%)
Goat	316	128	260	74	215	276	791 (62.3%)	478 (37.7%)
Total								13,172

Source: Registers of Owode Veterinary Hospital (2017)

The results showed 7.1% of calves and 11.5% of kids of the future productive herd population was lost during the study period due to the slaughter of pregnant animals. The high foetal wastage encountered not only pose a burden on the constant supply of meat and meat-related products; the national herd population; but also impacts negatively on

the economy of both the farmer and the country [29].

Based on analysis, the financial value accrued to all foetuses recovered during the period under study was approximated at ₦25,254,000 (\$69,762) and ₦440,000 (\$1,215) for cattle and goats respectively (Table 3). The value obtained

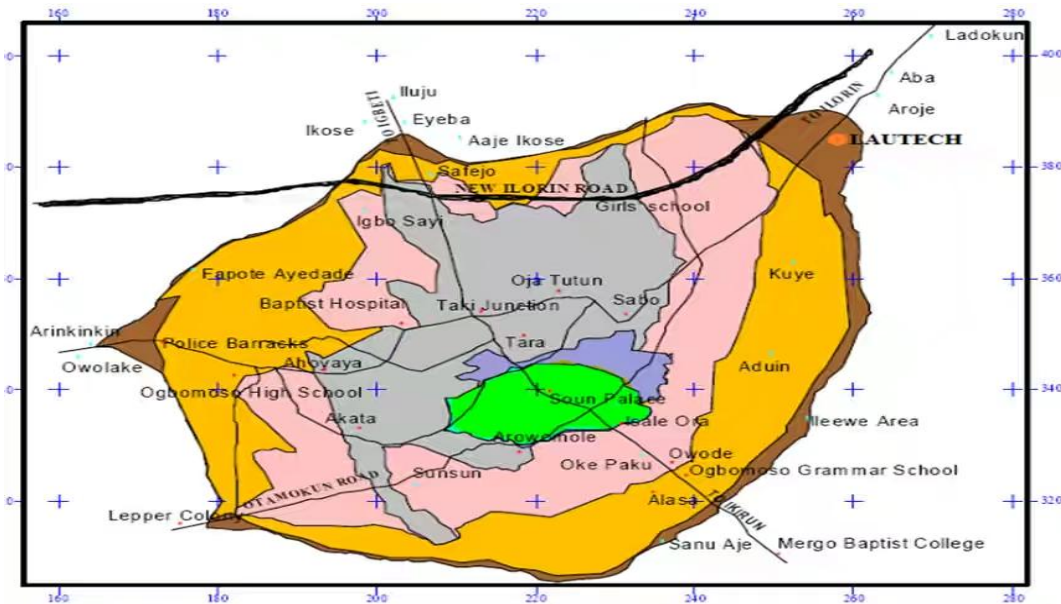


Fig. 1. Showing Ogbomosho town [34]

Table 2. Annual incidence of foetal wastages at the Oja-tuntun Slaughterhouse from 2014-2016

Animal species	2014		2015		2016		Total foetuses (%)
	No females slaughtered	Total no of foetuses	No of females slaughtered	Total no of foetuses	No females slaughtered	Total no of foetuses	
Cattle	755	56	1,086	80	1,580	108	244 (7.1)
Goat	128	14	74	0	276	41	55 (11.5)

Source: Registers of Owode Veterinary Hospital (2017)

Table 3. Annual records of slaughtered animals and foetuses recovered with estimated financial loss at the Oja-tuntun slaughterhouse from 2014-2016

Variables	2014	2015	2016	Total
Total cattle slaughtered	5,177	3,926	2,800	11,903
Number of foetal loss recovered	56	80	108	244
Amount of losses encountered (₦)	5,796,000	8,280,000	11,178,000	25,254,000
Amount of losses encountered (\$)	16,011	22,873	30,878	69,762
Total goats slaughtered	444	334	491	1,269
Number of foetal loss recovered	14	0	41	55
Amount of losses encountered (₦)	112,000	0	328,000	440,000
Amount of losses encountered (\$)	309	0	906	1,215

Source: Field survey (2017)

from this study was higher than value reported by [30], yet lower than that reported by [31] for cattle; whilst the value reported for goat is lower than values reported by [30], [31] and [32]. The estimated economic loss is too huge for a country where majority of its citizens spend less than \$1 daily [33]. Hence the need for all hands to be on deck to develop as well as implement local strategies aimed to reducing future economic losses.

4. CONCLUSION AND RECOMMENDATION

The result obtained from this study is an indication that foetal wastage is evident in Ojantun slaughterhouse in Ogbomoso town. Reoccurring slaughter of gravid females and its resultant high foetal wastage must be discouraged so as to meet the increasing demand for meat and meat-related products as well as boost the nation's economy.

All standard animal husbandry legislations that prevent both farmers and butchers from slaughtering pregnant animals must be implemented and compliance enforced. Similarly, the veterinary public health services relating to strict ante-mortem examination to isolate pregnant animals prior to slaughter must be strengthened along with continuous sensitization of all livestock stakeholders on the negative implication of slaughtering pregnant animals for consumption.

CONSENT

Informed consent was obtained from the relevant authorities prior to the onset of the study and collection of data.

ETHICAL APPROVAL

As per international standard, written ethical approval was obtained.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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