American-Eurasian Journal of Scientific Research 14 (3): 47-52, 2019
ISSN 1818-6785

DOI: 10.5829/idosi.aejsr.2019.47.52

# Bovine Fetal Wastage in Ubakala Abattoir: Public Health and Economic Implications

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**Abstract:** The occurrence of bovine fetal wastage in Ubakala abattoir over a period of five months was 12.2%. Most (40.3%) of the wasted fetuses were in their first trimester of gestation while 26.4% and 33.3% were in the second and third trimesters, respectively. It was also observed that 38% of the wasted fetuses were males while 34% were females. The ratio of the total number of slaughtered cattle to cows was 3.1:1. Adequate ante mortem inspection before slaughter should be able to eliminate the menace of slaughtering reproductive female animals. If unchecked, fetal wastage will in the nearest future, undermine every effort made by the government on food security and also cause a productive decline in the livestock industry in Nigeria.

**Key words:** Bovine · Fetal · Fetus · Wastage · Slaughter Slab

## INTRODUCTION

All over Africa and in the world different breeds of livestock are continuously slaughtered, the pregnancy status of the animal being slaughtered for meat are still not been ascertained before these livestock are slaughtered [1, 2]. The consistent cases for slaughtering pregnant and productive cows for meat may be due to inadequate veterinary attention, eye ball judgment or ignorance [3-5].

This is quite disturbing because the need for adequate human nutrition cannot be overemphasized [6] yet most countries do not adequately ensure that they combat fetal wastage. These countries, particularly developing and underdeveloped countries especially in the sub-Saharan Africa, slaughter cows without checking how prolific they are nor their reproductive status and become a threat to the existence of the cattle breeds and the livestock industry at large, affect the future supply of beef for human consumption, decrease the quality of meat meant for human consumption and the livelihood of the veterinarians.

The continuous slaughter of animal without noting their reproductive status against animal welfare standards and should be discouraged. The aim of this report is to know the prevalence of fetal wastage in the study area.

## MATERIALS AND METHODS

**Study Area:** The study was conducted in Ubakala, Umuahia South, Abia State. Geographically, Ubakala is located at approximately 8.5 kilometers from the central city of Umuahia, the Abia State Capital at longitude 5:30°N and 7.26°E and latitude 5.5533.

**Data Collection:** On each abattoir visit, the breed of each animal to be slaughtered was recorded for the period of five months. A total of 1840 animals were slaughtered during this period. Females for slaughter were carefully followed up and observed at ante mortem inspection to ascertain if they were gravid or not. At postmortem inspection, every gravid uterus recovered from the cow was then incised to expose the fetus. The sex and age of the fetuses were recorded.

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The economic loss was estimated using the formula by Babatunde *et al*. [7].

**Statistical Analysis of Data:** The data obtained was analyzed with IBM SPSS version 20 using simple descriptive statistics and Chi square was used to determine the statistical association between the variables. Results were presented in the form of tables.

## RESULTS

The overall prevalence of bovine fetal wastage in Ubakala abattoir was 12.2%. A total of 1840 cattle were slaughtered during the study period. One thousand two hundred and fifty two were bulls while five hundred and eighty eight were cows. Of the 588 cows slaughtered, 72 of them had gravid uteri.

The monthly prevalence of fetal wastage was highest in the month of July (17.9%) and lowest in August (6.3%, Table 1). The ratios of slaughtered cattle to slaughtered cows and those of slaughtered cows to pregnant cows are also represented in Table 1. In this study an average of one cow in every 3.1 cattle and 1 pregnant cow in every 8.2 cow was recorded. The month of July had the highest ratio of slaughtered cows to pregnant cows while August had the lowest ratio but in the case of slaughtered cattle to cows, July had the highest ratio while May had the lowest ratio.

Most of the gravid uteri were seen in the month of July with a prevalence of 30.6%. The months of June, April, May and August had prevalence of 23.6%, 19.4%, 16.7% and 9.7%, respectively. The difference in the monthly prevalence was not statistically significant. The White Fulani breed of cattle was predominantly slaughtered in the slaughter slab during the period of study.

Thirty four (47.2%) of the recovered fetuses were males while 38 (52.8%) were females. The monthly distribution shows that more fetuses were recovered in the month of July than in any other month. Most 29 (40.3%) of the wasted fetuses were in their first trimester of gestation while 19 (26.4%) and 24 (33.3%) were in their second and third trimesters respectively. In the first and third trimester, most of the wasted fetuses were females while in the second trimester, more male fetuses were wasted. This distribution was however not statistically significant.

From the table above, it can be observed that a total of ₦ 686, 000 through the slaughter of pregnant cattle at this abattoir was lost due to fetal wastage during the study period. Also the total number of cows lost has also contributed to loss of the expected one calf per cow per year.

## DISCUSSION

The slaughter of pregnant cows in the abattoir could be attributed to several factors including lack of ante mortem inspection, poverty which leads to selling of productive females to meet household needs. Illiteracy/ignorance is also a factor as most farmers sell their animals without checking their fertility or pregnancy status [8, 9]. The ratios of slaughtered cattle to slaughtered cows (3.1:1) and the ratio of slaughtered cows to pregnant cows (8.2:1) was also high. Female animals whatever their pregnancy status should not be slaughtered except when they are reproductively inactive [10, 11]. It is also unethical to slaughter pregnant animals [12]. This ratio is high when compared to the ratios of 7:1, 33:1, 14:1, 11:1 and 15:1 recorded Oduguwa *et al*. [13], Muhammed *et al*. [14], Fayemi *et al*. [15], Nwakpu and Osakwe [16] and Sanusi *et al*. [17], respectively. The location of the study and the level of supervision by the veterinarians could have contributed to the difference in these ratios. This practice of slaughtering female animals should be discontinued because it affects the availability of adequate animal protein of 3g/person/day required for adequate human nutrition [18, 19]. The continuous slaughter of female animals also decreases the annual growth rate of the livestock population in Nigeria [20]. Therefore it can be said that fetal wastage is a threat to the Nigeria livestock industry. The difference in the prevalence of fetal wastage in the study area and those in the different locations may be due to the differences in demand for meat/animal protein, in the various locations. The higher the demand for meat/animal protein, the more likely it is that a pregnant animal would be slaughtered. Also the difference in the sample size of the study population and the season of study may be a contributing factor. It could also be attributed to the proportion of cows to bulls slaughtered [13, 21].

The high rate of fetal wastage in either the 1st (Figure 1), or the 2nd (Figure 2) trimesters (Table 2) is most likely due to lack of proper ante mortem inspection or inadequate laboratory test. The high rates of fetal wastage in the 3rd trimester (Figure 3) have not been recorded previously. At this stage of pregnancy, the cow is visibly gravid and could have been slaughtered due to diseases or injuries. This could also be due to the fact that cattle

Table 1: The occurrence of fetal wastage in the abattoir

| Months | Number of Slaughtered cattle | Number of bulls | Number of cows | % of slaughtered cows | Number of pregnant cows | % of Fetal Wastage | Ratio of TSC: SC | Ratio of SC:PC |
|---|---|---|---|---|---|---|---|---|
| April | 404 | 277 | 127 | 31.4 | 14 | 11.0 | 3.2:1 | 9.1:1 |
| May | 324 | 230 | 94 | 29.0 | 12 | 12.8 | 3.4:1 | 7.8:1 |
| June | 403 | 271 | 132 | 32.8 | 17 | 12.9 | 3.1:1 | 7.8:1 |
| July | 360 | 237 | 123 | 34.2 | 22 | 17.9 | 2.9:1 | 5.6:1 |
| August | 349 | 237 | 112 | 32.1 | 7 | 06.3 | 3.1:1 | 16:1 |
| Total | 1840 | 1252 | 588 | 32.0 | 72 | 12.2 | 3.1:1 | 8.2:1 |

TSC: Total number of cattle slaughtered, SC: slaughtered cows, PC: pregnant cows

Table 2: Monthly occurrence of fetal wastage in Ubakala slaughter slab

| | Months | | | | | |
|---|---|---|---|---|---|---|
| Variables | April | May | June | July | August | Total |
| Status of Uterus | | | | | | |
| Gravid | 14 | 12 | 17 | 22 | 7 | 72 |
| Prevalence | 19.4% | 16.7% | 23.6% | 30.6% | 9.7% | 12.2% |
| Not gravid | 113 | 82 | 115 | 101 | 105 | 518 |
| Total | 127 | 94 | 132 | 123 | 112 | 588 |
| Breeds | | | | | | |
| White Fulani | 127 | 94 | 125 | 118 | 108 | 572 |
| Number gravid | 14 | 12 | 10 | 17 | 3 | 56 |
| SokotoGudali | 0 | 0 | 3 | 2 | 4 | 9 |
| Number gravid | 0 | 0 | 3 | 2 | 4 | 9 |
| Ndama | 0 | 0 | 3 | 2 | 0 | 5 |
| Number gravid | 0 | 0 | 3 | 2 | 0 | 5 |
| Muturu | 0 | 0 | 3 | 1 | 0 | 4 |
| Number gravid | 0 | 0 | 1 | 1 | 0 | 2 |
| Total | 127 | 94 | 132 | 123 | 112 | 588 |

Table 3: Monthly distribution of recovered fetuses and their parameters

| | Months | | | | | |
|---|---|---|---|---|---|---|
| Variables | April | May | June | July | August | Total |
| Sex of fetus | | | | | | |
| Female | 7 | 6 | 8 | 9 | 4 | 34 |
| Male | 7 | 6 | 9 | 13 | 3 | 38 |
| Total | 14 | 12 | 17 | 22 | 7 | 72 |
| Trimester of gestation | | | | | | |
| First | 6 | 6 | 9 | 6 | 2 | 29 |
| Second | 2 | 3 | 3 | 9 | 2 | 19 |
| Third | 6 | 3 | 5 | 7 | 3 | 24 |
| Total | 14 | 12 | 17 | 22 | 7 | 72 |

Table 4: Economic implications of fetal wastage during the study period

| Fetal sex | Fetal Number | Unit price of weaned calf | Total (₦) |
|---|---|---|---|
| Male | 38 | 10, 000 | 380, 000 |
| Female | 34 | 9, 000 | 306, 000 |
| Total | 72 | 19, 000 | 686, 000 |

Fig. 1: Fetal wastage in first trimester

Fig. 2: Fetal wastage in second trimester

Fig. 3: Fetal wastage in third trimester

are often sold by poor families to meet the need for money to send children to school and meet some other domestic needs [8].

It was noticed that most of the recovered fetuses were males. More female fetuses were wasted in the first and third trimesters than in the second (Table 3) however, the difference in the number of recovered fetuses for the different sexes with respect to the trimester of gestation was not statistically significant.

The majority of the slaughtered the cattle during the study period were white Fulani (Table 2). This is due to the fact that they are the most numerous and are widespread when compared with other cattle breeds in Nigeria [22]. The white Fulani represents about 37.2% of the nation's cattle population. The prevalence of the different breeds of cattle can be attributed to the overall prevalence in the nation and also their location.

**Public Health Implications:** The prevalence of fetal wastage in an abattoir or slaughter slab reveals the state of meat inspection in that abattoir or slaughter slab. Adequate ante mortem inspection before slaughter should be able to eliminate the menace of slaughtering reproductive female animals.

**Economic Implications:** The loss of ₦ 686, 000 for day old calves for 5 months can be considered to be very high. If unchecked, in the nearest future, fetal wastage will undermine every effort made by the government on food security and also cause a productive decline in the livestock industry in Nigeria. The economic loss related to the wastages of fetuses in the abattoir should be carefully considered and addressed. If not checked, consistent loss of fetuses in the abattoir due to slaughter of pregnant female animals could result in depletion of our livestock industries and in turn reduce the revenue generated from this industry.

## CONCLUSION AND RECOMMENDATION

The percentage of fetal wastage in this study is quite high and very unprofitable for the economy of the country, livestock owners and producers. The continuous indiscriminate slaughtering of female livestock will limit the animal protein available for human consumption. This also shows or exposes the lack of proper supervision by veterinarians in abattoirs. At ante mortem inspection, various means of pregnancy diagnosis/pregnancy detection techniques should be instituted. This will not only curtail the menace of fetal wastage but also increase the livestock population, quantity of meat available for human consumption and improve the quality of meat inspection. To achieve this, we recommend the following:

- There should be strict government policies towards eliminating or minimizing the occurrence of fetal wastage especially in food animals. This can be achieved by upgrading the status of the abattoirs/slaughter house and providing basic

equipment necessary for proper inspection of food animals. Also veterinarians should be attached to every abattoir/slaughter house.

- The Veterinarians in every abattoir/slaughter house and control pots should ensure that their duties are not neglected.
- The government should carry out mass education of farmers, butchers, abattoir workers, on the effect of fetal wastage on animal production and the economy of the nation.

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