

FOETOMETRICS OF COWS SLAUGHTERED AT SOKOTO MODERN ABATTOIR

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ABSTRACT

Knowledge on the estimate cows slaughtered and foetal ages of slaughtered pregnant cows will go a long way to tracing the cause(s) of the slaughter and or foetal wastage and the possible means of addressing the menace. Thus, this study was carried out to assess average number of cattle slaughtered at Sokoto Modern Abattoir over a period of three months. Data was collected between April and June during which the abattoir was visited early in the morning (6 a.m) before slaughter activities commence. Foetuses removed from the pregnant cows by butchers during evisceration was collected, weighed and crown rump length was taken in centimeter with aid of a flexible measuring tape. The estimate gestation ages of the wasted foetuses were determined from the crown rump length measurements. A total of 9,716 cattle were slaughtered with an average of 2,429 weekly. Out of the total number slaughtered, 4872 were males while 4844 were females. From the number of female cattle slaughtered, 129 foetuses were recovered, of which 0.7% of the foetuses were in the the first trimester of the dam pregnancy; 42.3% were in the second trimester while 57% were at the third trimester. The study concludes that sex ratio of the cattle slaughtered was approximately 1:1 (male:female). A total weight of 966.3Kg foetal wastage was recorded over the three months period. Pregnant cattle at the third trimester were the most slaughtered (57%).

Keywords: Cattle, foetal, wastage, Sokoto, abattoir

INTRODUCTION

As at 2018, Sokoto State ranks second in Nigeria in terms of livestock population with an estimated 3 million cattle, 3 million sheep, 5 million goats and 4, 600 camels (Akawu *et al.*, 2018). Despite the enormous role played by these food animals, their production in the country is too low to meet up with the increasing human population demands. The indiscriminate and or careless slaughter of pregnant animals in abattoirs also adds to depletion of livestock population (Du-sai *et al.*, 2001). According to Garba *et al.* (1992) destruction of foetuses due to slaughter of pregnant animals is forbidden by law in nearly all countries of the world, Nigeria inclusive. Despite this law, foetal wastages are still been recorded from different domestic animals in Nigeria (Garba, 2019). Selling of cattle to livestock market is a common practice by farmers for the purpose of getting income. Farmers may sale their animals without knowing their pregnancy status as a result of limited veterinary and services in rural areas. Shortaage of animal feed during prolonged draught could also cause the indiscriminate sales of pregnant animals. Also presence of diseases in a location could as well trigger the sales of pregnant animals as reported by in Nigeria by by Oduguwa et al (2013) and and in Zambia by Zulu *et al.* (2013). Many researches have been done in Nigeria on foetal wastages and especially on cattle but little have been done on the foetometrics and especially estimating the age(s) of the wasted foetuses. Knowing the estimate foetal ages will go a long way to tracing the cause of the slaughter and or wastage and the possible means of addressing the menace. This study therefore examined the average number of cattle slaughtered in Sokoto Modern abattoir over a three month period, determined the weight of the foetal wastage, assessed the proportion of pregnant cows slaughtered among the number of females slaughtered and estimated the age of the wasted foetuses.

MATERIALS AND METHODS

Study area:

The study was conducted at Sokoto State modern abattoir, the abattoir is located in the Sokoto North Local Government Area of Sokoto State.

Period of sample collection:

The data was collected for three months (April, May and June) 2020. During the period, the abattoir was visited early in the morning (6 a.m) before slaughter activities commence.

Sample collection:

Foetus removed from the pregnant cows by butchers during evisceration was collected, weighed and crown rump length was taken in centimeter with aid of a flexible measuring tape.

Data collection and or analyses:

The total number of cattle slaughtered (both male and female) was summed on weekly and monthly basis and the weekly data summed to get the total slaughtered for each of the males and females. The monthly and weekly mean of cattle slaughtered was taken by dividing the total number of weeks in the month. The percentage number of females slaughtered was calculated as:

Total number of females slaughtered ÷ Total number of cattle slaughtered × 100;

The percentage number of slaughtered pregnant females was calculated as:

Number of females with foetal loss ÷ Number of females slaughtered × 100;

The number of foetal wastage was calculated by summing the number of weekly foetal wastages;

The weight of foetal wastages was calculated by summing the weight of weekly foetal wastages;

The age of foetal wastage was calculated according to Noakes (1986) formular: Foetal age in days = 2.5 ×(CRL + 21). Where CRL means crown rump length. The number of days was subsequently matched to the month equivalent and later to the trimester equivalent. Number of gestational monthly age of foetal wastages was given based on the number of foetal wastages in each of the gestational ages ranging from 1 to 9 months. The percentage gestational monthly ages of foetal wastages was calculated as the: Number of foetal wastages in each of the gestational month ÷ the total number of foetal wastages × 100

RESULTS AND DISCUSSION

Table 1 showed that 9716 cattle were slaughtered with the average of 1,619 cattle per week, 4,872 were male with an average of 1,624 per week while 4844 were female with an average of 1614 per week. The result is contrary to the report of Oyebanji (2019) in Sokoto modern abattoir that indicated that the number of female cattle slaughtered was higher than that of male.

Table 1: Total Number of Cattle Slaughtered

| Week | March | | April | | May | | Total | Mean |
|-------|-------|--------|--------|--------|--------|--------|-------|---------|
| | Male | Female | Male | female | Male | Female | | |
| 1 | 436 | 400 | 403 | 432 | 394 | 400 | 2465 | 410.83 |
| 2 | 398 | 411 | 403 | 397 | 437 | 391 | 2437 | 406.17 |
| 3 | 390 | 418 | 387 | 390 | 417 | 399 | 2401 | 400.17 |
| 4 | 400 | 394 | 404 | 393 | 403 | 419 | 2413 | 402.17 |
| Total | 1624 | 1623 | 1597 | 1612 | 1651 | 1609 | 9716 | 1249.34 |
| Mean | 406 | 405.75 | 399.25 | 403 | 412.75 | 402.25 | 2429 | 312.24 |

Table 2 revealed that the percentage number of female cattle slaughtered was 49.86. A report by Oyabanji (2019) in the same abattoir showed that, the percentage number of female cattle slaughtered was 53.3. In table 3, the average weekly percentage number of pregnant cattle slaughtered was 2.7, the rate of pregnant number of female cattle slaughtered in this study fall within the percentage (2.43) recorded by simeon et al (2019) at some abattoirs in south western Nigeria.

Table 2: Percentage number of female slaughtered

| Week | March - Slaughter | April - Slaughter | May - Slaughter | Total | Mean |
|-------|-------------------|-------------------|-----------------|--------|--------|
| 1 | 47.85 | 51.74 | 50.28 | 149.97 | 49.99 |
| 2 | 50.8 | 49.63 | 47.22 | 147.65 | 49.22 |
| 3 | 51.73 | 50.19 | 48.89 | 150.81 | 50.27 |
| 4 | 49.62 | 49.31 | 50.97 | 149.9 | 49.96 |
| Total | 200 | 200.87 | 197.48 | 598.33 | 199.44 |
| Mean | 50 | 50.22 | 49.37 | 149.59 | 49.86 |

Table 3: Percentage number of female pregnant

| Week | March | April | May | Total | Mean |
|-------|-------|-------|------|-------|------|
| 1 | 3.5 | 3.9 | 3 | 10.4 | 3.5 |
| 2 | 1 | 3.3 | 2.8 | 7.1 | 2.4 |
| 3 | 1.7 | 2.8 | 2.7 | 7.2 | 2.4 |
| 4 | 2.0 | 2.3 | 2.8 | 7.1 | 2.4 |
| Total | 8.2 | 12.3 | 11.3 | 31.8 | 10.7 |
| Mean | 2.1 | 3.1 | 2.8 | 8 | 2.7 |

The result in table 4 indicated 129 foetal wastages out of 4844 females slaughtered, which was equivalent to 10.8%. The finding was contrary to the report of Oyebanji (2019) who reported 24 foetal wastages out of 749 female cattle slaughtered (3.2%) in the same abattoir. Simeon et al 2019 revealed 4.44% foetal wastages in Minna while 5.01% was revealed by Cadmus and Adesokan (2010) in south western Nigeria. The higher value obtained for this study might be attributed to the seasonal differences or upsurge of insecurity in the country and especially within the north western region.

Table 5 showed that the total weight of foetal wastages recovered during the three month period was 966.3 Kg out of which the the second month (May) had the highest (412.1Kg).

Table 4: Number of foetal wastages

| Week | March | April | May | Total | Mean |
|-------|-------|-------|------|-------|------|
| 1 | 14 | 17 | 12 | 43 | 14.3 |
| 2 | 4 | 13 | 11 | 28 | 9.3 |
| 3 | 7 | 11 | 11 | 29 | 9.7 |
| 4 | 8 | 9 | 12 | 29 | 9.7 |
| Total | 33 | 50 | 46 | 129 | 43 |
| Mean | 8.3 | 12.5 | 11.5 | 32.3 | 10.8 |

Table 5: Weight of foetal wastages

| Week | March | April | May | Total | Mean |
|-------|-------|--------|-------|--------|-------|
| 1 | 136.4 | 129.6 | 51.8 | 317.8 | 105.9 |
| 2 | 24.4 | 93.1 | 53.6 | 171.1 | 57.0 |
| 3 | 54.4 | 104.5 | 79.5 | 238.4 | 79.5 |
| 4 | 64.5 | 84.9 | 89.6 | 239 | 79.7 |
| Total | 279.7 | 412.1 | 274.5 | 966.3 | 322.1 |
| Mean | 69.93 | 103.03 | 68.63 | 241.58 | 80.53 |

Table 6 showed that the second month of the study (May) had the foetuses with the highest number of gestational days (advanced pregnancy).

Table 6: Age of foetal wastage (in days)

| Week | March | April | May | Total | Mean |
|-------|-------|-------|-------|--------|-------|
| 1 | 193.8 | 174.8 | 156.2 | 524.8 | 174.9 |
| 2 | 81.3 | 147.6 | 134.1 | 363 | 121 |
| 3 | 106.1 | 164.9 | 113.8 | 384.8 | 128.3 |
| 4 | 157.4 | 163.8 | 118.6 | 439.8 | 146.6 |
| Total | 538.6 | 651.1 | 522.7 | 1712.4 | 570.8 |
| Mean | 134.7 | 162.8 | 130.7 | 428.1 | 142.7 |

Table 7 entailed there were no foetal wastages encountered during the first and second months of gestation and the seventh month had the highest (35) . Oyebanji (2019) worked in the same abattoir and revealed the fourth month with the highest number of foetal wastage. The differences of foetal wastages recovered might be as a result of differences in the number of female cattle slaughtered, season or the upsurge of insecurity that might have forced many rural farmers to sell their animals to cattle traders due to insecurity.

Table 7: Number of gestation monthly ages of foetal wastage

| Month | March | April | May | Total | Mean |
|-------|-------|-------|-----|-------|------|
| 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 1 | 0 | 1 | 0.3 |
| 4 | 7 | 6 | 13 | 26 | 8.7 |
| 5 | 3 | 6 | 8 | 17 | 5.7 |
| 6 | 2 | 5 | 5 | 12 | 4 |
| 7 | 8 | 17 | 10 | 35 | 11.7 |
| 8 | 7 | 9 | 6 | 22 | 7.3 |
| 9 | 6 | 6 | 6 | 16 | 5.3 |
| Total | 33 | 50 | 46 | 129 | 43 |
| Mean | 3.7 | 5.6 | 5.1 | 14.3 | 4.8 |

Table 8 showed that the highest percentage (57) of foetal wastage was at the third trimester of pregnancy. The result is similar to the findings of Njoga *et al.* (2021) who reported higher incidence of foetal wastage in cattle at the third trimester of pregnancy. The finding was contrary to Oyebanji (2019) who worked in the same abattoir but reported the second trimester with the highest percentage (87.5) of foetal wastage. The highest percentage (57) of pregnant cattle slaughter at the third trimester implies that inadequate knowledge of pregnancy diagnosis may not be the likely cause since at the third trimester of pregnancy, livestock farmers can easily recognize the pregnancy status of their cattle by mere visual observation.

Table 8: Percentage gestational monthly ages of foetal wastage

| Month | March | April | May | Total | Mean |
|-------|-------|-------|------|-------|------|
| 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 2 | 0 | 2 | 0.7 |
| 4 | 21.2 | 12 | 28.3 | 61.5 | 20.5 |
| 5 | 9.1 | 12 | 17.4 | 38.5 | 12.8 |
| 6 | 6.1 | 10 | 10.9 | 27 | 9 |
| 7 | 24.2 | 34 | 21.9 | 79.9 | 26.6 |
| 8 | 21.2 | 18 | 13 | 52.2 | 17.4 |
| 9 | 18.2 | 12 | 8.7 | 38.9 | 13 |
| Total | 100 | 100 | 100 | 300 | 100 |
| Mean | 11.1 | 11.1 | 11.1 | 33.3 | 11.1 |

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