Retrospective Assessment of Foetal Wastage at the Lafenwa Slaughter SLAB (2021 - 2025)

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ABSTRACT

The indiscriminate slaughter of pregnant food animals is a major issue in livestock production, leading to significant economic losses and depletion of future herd stock in many developing countries, including Nigeria. This study retrospectively evaluated the incidence and trend of bovine foetal wastage (FW) at the Lafenwa Slaughter Slab in Abeokuta, Ogun State, Nigeria, over a five-year period. Slaughter Slab records on the total number of female cattle (cows and heifers) slaughtered and the number of foetuses recovered (foetal wastage) were analysed for the period spanning January 2021 to December 2025. The annual foetal wastage rate (FWR) was calculated as the percentage of foetuses wasted relative to the total number of female cattle slaughtered. Descriptive statistics were used for data analysis and trend evaluation. A total of 217,714 female cattle were slaughtered, with a total foetal wastage of 25,509 foetuses during the study period. The annual number of female cattle slaughtered and foetal wastage cases showed year-on-year variations. The overall mean annual FWR for the five years studied was 11.71 %. The highest FWR was recorded in 2025 at 18.1%, and the lowest was in 2021 at 10.17%. The findings indicate that a considerable proportion of female cattle slaughtered during the study period were pregnant resulting in substantial foetal losses. This represents a significant economic loss to the livestock industry and may negatively affect future herd replacement capacity and a threat to food security. Comparative analysis shows that these findings are consistent with recent reports from other regions of Nigeria, including Jalingo (12.3%) and Kano (14.5%), suggesting that foetal wastage remains a widespread issue linked to inadequate enforcement of ante-mortem inspection and poor pregnancy detection practices. The increasing trend observed in this study underscores the urgent need to strengthen the implementation of existing animal inspection protocols and the adoption of practical innovations such as portable pregnancy detection technologies to reduce losses, while also enhancing awareness among livestock owners and traders about the long-term reproductive, economic and food security consequences of foetal wastage.

Keywords: *Abeokuta, Food security, Foetal wastage, Economic losses, Ante-mortem inspection, Pregnancy detection, Livestock sustainability*



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INTRODUCTION

The livestock sector is more than just an economic activity; it is a vital source of food, income, and daily survival for millions of families. In Nigeria, cattle production plays a central role in providing animal protein, creating jobs, and supporting rural livelihoods. For many households, livestock represents financial security, cultural value, and a means of sustaining future generations (FAO, 2023).

Beyond Nigeria, similar concerns have been reported across West Africa, where increasing population pressure, climate variability, and disruptions in food supply chains between 2023 and 2025 have intensified reliance on livestock as a major protein source. These pressures may indirectly contribute to increased slaughter rates, including pregnant animals, as demand for meat continues to rise.[2].

Despite its importance, the sector continues to struggle with challenges that threaten its growth and long-term sustainability. Among 2these challenges is a troubling yet often overlooked issue, the continued slaughter of pregnant female cattle in abattoirs and slaughter slabs. Beyond the immediate economic loss, this practice reduces future herd replacement, weakens livestock productivity, threatens food security and gradually undermines the stability of the livestock industry (Fayemi & Muchenje, (2013), Nabasirye, S., Baluka, S. A., & Sengooba, S. (2024).

Addressing this problem is therefore not only an economic necessity but also essential for protecting the future of livestock production in Nigeria.

The slaughter of gravid animals results in foetal wastage (FW), defined as the loss of developing foetuses during the slaughter process. Foetal wastage represents a serious economic loss due to the destruction of future breeding stock and the reduction in potential meat production. Cadmus & Adesokan, 2010, Alhaji & Odetokun, 2013). Beyond economic implications, the practice raises significant animal welfare concerns and often contravenes existing livestock production and meat inspection regulations designed to prevent the slaughter of pregnant animals.

Besides its negative effect on herd replacement capacity, reducing future livestock population growth, high rates of FW also compromise long-term protein availability and livestock productivity.

Mohammed et al., (2024) have documented how the slaughter of gravid animals contributes to foetal wastage and economic losses in Nigerian abattoirs. Recent studies have highlighted the persistence of foetal wastage as a major challenge in Nigerian abattoirs. For instance, (Uko, E. S., Jiburum, B. C., & Okoye, J. O. (2024) reported a foetal wastage rate of approximately 12.2% in Jalingo abattoir, with evidence suggesting that nearly one foetus is lost for every eight cows slaughtered.

Similarly, Ahmad (2024) identified widespread slaughter of gravid animals across Nigerian abattoirs, attributing this trend to poor enforcement of livestock regulations, inadequate ante-mortem inspection, and limited awareness among livestock producers.

The persistence of this practice reflects gaps in enforcement and compliance that continue with the existing meat inspection laws. Several other studies conducted in slaughter facilities across Nigeria have consistently reported considerable levels of foetal wastage among cattle, sheep, and goats, highlighting the magnitude of the problem (Jibia et al., 2024). Effective ante-mortem examination, including the use of pregnancy detection techniques and diagnostic kits, remains critical in preventing slaughtering of pregnant animals. Strengthening inspection protocols is therefore essential in addressing this issue.

The Lafenwa Slaughter Slab, is a major meat processing facility serving Abeokuta and surrounding communities in Ogun State and it represents an important site for evaluating this problem. Although previous studies have assessed foetal wastage at this location, there is a need for continued surveillance to update data for better understanding of the current magnitude and trend of the challenge. This study therefore undertook a five-year retrospective analysis (2021–2025) of slaughter records to quantify foetal wastage and evaluate its trend over time.

MATERIALS AND METHODS

Study Area

This study was a retrospective analysis conducted at Abeokuta, Ogun State, Nigeria. (GPs: 7.163847, 3.328661E). The Lafenwa Slaughter Slab is located in the Lafenwa area of Abeokuta, the capital city of Ogun State, South-West Nigeria. The facility serves as one of the major centres for cattle slaughter and meat distribution within Abeokuta and its surrounding communities. The slaughter slab is strategically situated in a densely populated and commercially active area, which facilitates easy access to butchers, meat traders, and consumers (Figure 1).



Figure 1: The map shows the Lafenwa Slaughter Slab

Table 1: Number of female cattle slaughtered and the resulting foetal wastage at Lafenwa Abattoir from 2021 to 2025.

Years	NFCS	FW	FWR (%)
2021	48,013	4,882	10.17
2022	54,976	5,781	10.51
2023	50,459	5,246	10.40
2024	39,417	5,100	12.94
2025	24,849	4,500	18.10
Total	217,714	25,509	11.71

NFCS**:** Number of female cattle slaughtered, FW: Foetal wastage, FWR: Foetal wastage rate

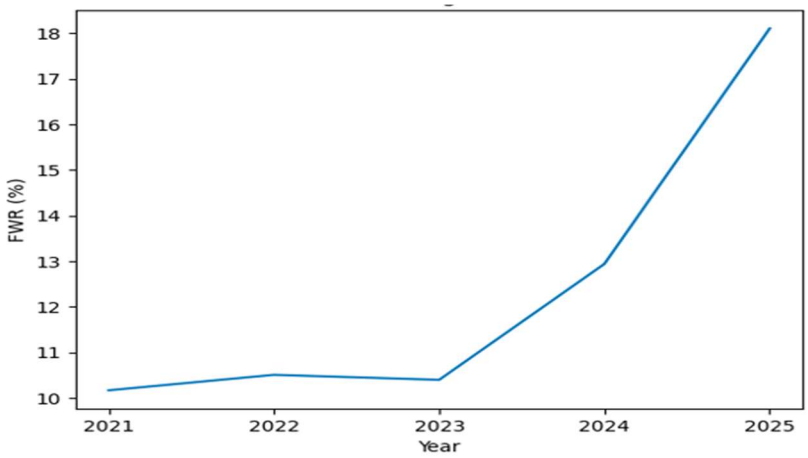


Figure 2: Graphical representation of trend of foetal wastage rate (2021 – 2025)

Data Collection

Data for this study were obtained from official slaughter records maintained by the veterinary offices at the Lafenwa slaughter slab. The dataset spans a five-year period from January 2021 to December 2025. The specific variables retrieved for annual analysis included the total number of females slaughtered and the corresponding instances of foetal wastage.

Analytical Methods

Data were obtained from abattoir log books and veterinary inspection records, including daily slaughter records and ante-mortem inspection reports. Only records containing complete information on species, pregnancy status, and date of slaughter were included in the study. Incomplete or inconsistent records were excluded to ensure data accuracy and reliability. Data validation was carried out through cross-checking of abattoir logbooks with veterinary inspection records to confirm consistency and reduce the possibility of recording errors or bias. This ensured that only verified cases of pregnant animal slaughter were included in the analysis. The collected data were collated and analyzed using Microsoft Excel version 2020. Descriptive statistics, including frequencies and percentages, were used to summarize the data. The primary parameter calculated was the annual foetal wastage rate (FWR), expressed as a percentage using the formula:

FWR (%) = (Number of Foetuses Wasted ÷ Number of Female Cattle Slaughtered) × 100

Trend analysis was conducted by evaluating year-to-year changes in the number of female cattle slaughtered, the number of foetal wastage cases, and the foetal wastage rate (FWR). A Chi-square (χ^2) test of independence was also used to assess whether foetal wastage rates differed significantly across the study years (2021–2025), with significance set at $p < 0.05$.

RESULTS

The total number of female cattle slaughtered, the number of foetuses wasted, and the calculated foetal wastage rate (FWR) at Lafenwa slaughter slab between January 2021 and December 2025 are presented in (Table1). A total of 217,714 female cattle were slaughtered during the five-year period under study (2021-2025), resulting in 25,509 cases of foetal wastage. The overall FWR for the period was 11.71%. In 2021, 48,013 female cattle were slaughtered, with 4,882 foetuses wasted, giving a FWR of 10.17%. In 2022, the NFCS increased to 54,976, while foetal wastage rose to 5,781 cases, resulting in a FWR of 10.51% (Figure 2; Table 2). In 2023, 50,459 female cattle

were slaughtered, with 5,246 foetuses wasted, corresponding to a FWR of 10.40%. However, in 2024, although the NFCS declined to 39,417, foetal wastage remained relatively high at 5,100 cases, leading to an increased FWR of 12.94%. The highest FWR was recorded in 2025. Despite a further reduction in the NFCS to 24,849, a total of 4,500 foetuses were wasted, producing a markedly elevated FWR of 18.1%. Overall, the results indicate a progressive increase in the FWR over the five-year period, particularly between 2024 and 2025, despite a decline in the total NFCS.

The Chi-square (χ^2) test of independence was conducted with the derived data in (Table 2). So as to determine whether foetal wastage differed significantly across the study years (2021–2025). The trend shows a gradual increase in foetal wastage rate from 2021 to 2025, with a sharp rise in 2024 and 2025. This upward pattern is statistically supported by the Chi-square test, indicating significant year-to-year variation in foetal wastage, indicating worsening control measures in recent years. The analysis showed a statistically significant association between year and foetal wastage rate, χ^2 (4, N = 217,714) = 1311.64, $p < 0.001$.

DISCUSSION

This study assessed the trend of female cattle slaughter and associated foetal wastage at Lafenwa slaughter slab over a five-year period (2021–2025). The findings revealed an overall Foetal Wastage Rate (FWR) of 11.71%, indicating that a considerable proportion of the female cattle slaughtered during the study period were pregnant at the time of slaughter. The total number of female cattle slaughtered declined from 54,976 in 2022 to 24,849 in 2025 while the FWR increased substantially. This indicates that although fewer female cattle were slaughtered, a higher proportion of them were pregnant. This trend may reflect gaps in pregnancy detection prior to slaughter, economic pressures on livestock owners and traders, limited awareness of the long-term reproductive and economic consequences of slaughtering pregnant animals and inadequate enforcement of existing meat inspection regulations (Herrero et al., 2013).

A statistically significant variation across years (χ^2 = 1311.64, $p < 0.001$), indicates that foetal wastage in Lafenwa Abattoir is not constant but varies significantly over time, suggesting fluctuations in compliance with ante-mortem inspection practices and enforcement of abattoir regulations. Foetal wastage has implications beyond immediate economic loss, similar to findings reported in previous studies. It contributes to reduced herd growth, threatens food security, and challenges efforts aimed at improving livestock productivity. Continuous slaughter of pregnant animals, if not adequately controlled, could result in a gradual decline in cattle population growth over time. The high FWR recorded in 2025 (18.1%) suggests that nearly one out of every five female cattle slaughtered was pregnant. This trend reduces future herd replacement potential and negatively affects meat production sustainability (Ekundayo & Awoseyi, 2020)

The high foetal wastage observed at Lafenwa slaughter slab is consistent with recent studies conducted in other parts of Nigeria. For instance, Uko et al. (2024) reported a foetal wastage rate of 12.3% in Jalingo abattoir, attributing the occurrence to inadequate ante-mortem inspection and poor regulatory compliance. Similarly, Ahmad (2024), in a study conducted at the Kano Central Abattoir, Kano State, Nigeria, reported a foetal wastage rate of 14.5%, attributing the high level of wastage to weak enforcement of livestock laws and limited use of pregnancy detection methods.

Bakari et al., (2025), also conducted a study at Kano Abattoir, Kano State, Nigeria, a foetal wastage rate of approximately 15.0% was reported, noting significant economic losses in cattle, sheep, and goats slaughtered at the abattoir. These similarities suggest that foetal wastage remains a persistent national challenge rather than a localized issue. Therefore, controlling foetal wastage is essential for sustainable livestock production and long-term herd population stability. The increasing trend observed in this study highlights the importance of strengthening veterinary inspection existing laws, usage of modern pregnancy diagnostic techniques, and improving awareness among livestock owners, traders and abattoir workers regarding the reproductive and economic consequences of slaughtering pregnant animals. The adoption of improved routine pregnancy diagnosis prior to slaughter may substantially reduce foetal wastage and promote improved livestock management practices.

Conclusion and Recommendations

Foetal wastage remains a persistent concern at Lafenwa slaughter slab, with an increasing trend observed in the later years of the study. These findings emphasize the need for enhanced veterinary inspection practices, especially ante-mortem pregnancy diagnosis, and strengthened implementation of existing regulations designed to prevent the slaughter of pregnant animals. Ogun State operates in alignment with the Meat Inspection Act of Nigeria (1968), Sections 8–12, which prohibit the slaughter of visibly pregnant animals and mandate proper ante-mortem inspection by certified officers. Additionally**,** alignment with the Animal Disease Control Act (2022) reinforces national standards relating to animal health, welfare, and reproductive protection. Despite the existence of these regulatory frameworks, the relatively high FWR suggests that additional supportive measures and strengthened implementation strategies may be beneficial. The loss of 25,509 potential future cattle over

the five-year period represents a substantial reduction in breeding potential and may affect herd replacement capacity, food security, and the livelihoods of stakeholders within the livestock sector. This study therefore recommends that existing legislation should be strengthened through improved monitoring and compliance mechanisms in line with current meat inspection regulations. There is also a need to enhance veterinary inspection services through increased manpower, capacity building, and continuous professional development for abattoir personnel (Njoga et al., 2021). Importantly, the adoption and routine use of portable pregnancy diagnostic kits at slaughter slabs should be encouraged to facilitate rapid and accurate detection of pregnancy during ante-mortem inspection. Additional measures such as increased public awareness, public–private collaboration, and the introduction of incentive-based approaches to discourage the slaughter of pregnant animals are also strongly recommended.

Ethical Statement

This study involved a retrospective analysis of existing slaughter records from Lafenwa slaughter slab, Abeokuta, Ogun State. No live animals were used and no direct animal experimentation was conducted. Therefore, ethical approval was not required for this study.

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