



PREVALENCE OF *FASCIOLIASIS* AMONG RUMINANT SPECIES IN SELECTED ABATOIRS IN JOS NORTH PLATEAU STATE, NIGERIA

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ABSTRACT

The study assessed the prevalence *fascioliasis* among ruminant animals slaughtered in three major abattoirs of Jos Central, *Bulbula*, and *Yan-Ganda* in Jos, Plateau State, Nigeria. A total of 3,510 samples were examined, with an overall prevalence rate of 10.50%. Jos Central recorded the highest prevalence (12.80%); followed by *Yan-Ganda* (10.20%) and *Bulbula* (8.50%). Prevalence was analyzed by sex, season, and breed. Males showed higher infection rates across all species, sheep (24.5%) and goats (15.2%) at *Yan-Ganda*. Odds ratio (OR) analysis confirmed higher risk in males, especially goats (OR = 2.36) and sheep (OR = 1.92), the Chi-square test showed no significant association ($\chi^2 = 0.24$; $P > 0.05$). Seasonally, infection rates peaked during the rainy season across all abattoirs, with the highest in cattle at *Yan-Ganda* (22.2%). Goats showed an increased risk during the rainy season (OR = 1.71), this was not statistically significant ($\chi^2 = 1.33$; $p > 0.05$). Breed analysis revealed higher infection rates in White Fulani (23.03%) and Red Bororo (22.02%) cattle, as well as in Red Sokoto goats and Uda sheep. In conclusion, *fascioliasis* remains prevalent among ruminants in Plateau State, with variations influenced by sex, age, season and breed. Targeted control measures especially deworming programs for high-risk groups are recommended. Further studies should investigate environmental and seasonal factors affecting transmission to enhance preventive strategies in the region.

Keywords: *Fascioliasis*, Ruminants, Prevalence, Risk, Factors

INTRODUCTION

Fasciolosis, is a parasitic disease caused predominantly by *Fasciola gigantica* and *Fasciola hepatica*, remains a significant constraint to ruminant health and livestock productivity in Nigeria and other tropical regions. These trematodes infect the liver and bile ducts of cattle, sheep, and goats, leading to substantial economic losses through liver condemnation, decreased weight gain, reduced feed conversion efficiency, and mortality. Transmission is primarily waterborne, involving *Lymnaea natalensis* as the intermediate snail host, which facilitates the spread of infective metacercariae in grazing environments (Mas-Coma *et al.*, 2018; Odeniran *et al.*, 2021). The widespread occurrence of *fasciolosis* in Nigeria has been confirmed by several epidemiological studies, which reveal significant variations in prevalence across regions and animal species. For example, in northern Bauchi State, Isah (2019) reported high infection rates among slaughtered ruminants, reaching 48.5% in Jama'are and 46.9% in Zaki. The study emphasized species- and age-specific susceptibilities, with cattle and older animals more frequently infected. Notably, seasonal dynamics were observed, with infection rates peaking during the early and late rainy seasons, a period associated with increased snail activity and pasture contamination due to flooding. These infection patterns translate into considerable economic consequences. According to Odeniran *et al.* (2021), *fasciolosis* in small ruminants alone results in estimated annual losses of US\$77.94 million US\$60.13 million from direct losses such as liver condemnation and mortality, and US\$17.81 million from indirect productivity declines. Compounding this burden is the resistance of many livestock owners to veterinary liver condemnation, indicating limited awareness and non-compliance with meat hygiene practices. Supporting studies by Liba *et al.* (2018) and recent findings by Chongmobmi *et al.* (2025) further confirm the sustained prevalence of *fasciolosis* and related trematode infections among small ruminants in northeastern Nigeria. Despite its continued presence and economic toll, *fasciolosis* remains underexplored in many Nigerian contexts particularly among sheep and goats. While some data exist for cattle, there is a lack



of comprehensive, region-specific research addressing the disease's epidemiology in small ruminants (Liba *et al.*, 2018; Odeniran *et al.*, 2021). Moreover, the ecological and seasonal drivers of infection, as well as the distribution and role of the intermediate host (*Lymnaea natalensis*): remain poorly understood across various agroecological zones (Odeniran *et al.*, 2021; Mas-Coma *et al.*, 2018). These knowledge gaps hinder the design of effective, locally adapted control strategies. In addition, existing economic assessments of *fasciolosis* often provide broad estimates without capturing the nuanced financial impact on smallholder farmers, such as reductions in productivity, income losses, and organ condemnations at slaughter (Liba *et al.*, 2018; Ejeh *et al.*, 2015). Addressing these limitations requires a more targeted and species-inclusive approach. Therefore, this study aims to assess the prevalence of *fasciolosis* in cattle, sheep, and goats slaughtered within Jos metropolis, Plateau State, Nigeria. Findings from this study will contribute to a deeper understanding of the disease's regional epidemiology and support the formulation of effective and sustainable control interventions.

MATERIALS AND METHODS

Study Area

The study was conducted in Jos Metropolis, the capital of Plateau State, Nigeria, located at 9.9285° N latitude and 8.8921° E longitude (GPS Coordinates of Jos, Nigeria) Ibrahim *et al.* (2023) reported that the Jos Plateau covers approximately 6,700 km², lies at 1,280 m above sea level, with annual rainfall averaging 137 cm during 1965–68, and local residents primarily engaged in agriculture, tin mining, and cattle grazing. Situated on the Jos Plateau, which averages 1,280 m above sea level, the area features rolling hills, valleys, and cool temperatures ranging between 13 °C and 22 °C. Jos experiences a distinct wet season (May to October) and dry season (November to April): with average annual rainfall between 1,317 mm and 1,460 mm. Jos is a key agricultural region where livestock farming including cattle, sheep, and goats is economically significant (Ibrahim *et al.*, 2023; Encyclopaedia Britannica, n.d). The region's cool climate, fertile soils, and presence of water bodies create an environment favorable for fasciolosis transmission, making it suitable for studying this parasitic infection in

Study Design

A cross-sectional study design was adopted to determine the prevalence of *fasciolosis* among ruminant species (cattle, sheep, and goats) slaughtered in selected abattoirs within Jos Metropolis. Three major abattoirs were purposively selected based on their size, accessibility, and slaughter volume: Jos Central Abattoir in Dogon Karfe, Jos South LGA a government-owned facility and the principal slaughterhouse in the metropolis; *Bulbula* Neighborhood Abattoir in *Bulbula*, Jos North LGA an informal but longstanding and active slaughter slab; and *Yan-Ganda* Neighborhood Abattoir in the *Yan-Ganda* area of Jos North LGA, which informally serves a significant portion of the local population.

Sample Size Determination

Based on a previous study in Northern Bauchi State, Nigeria, which reported a *fasciolosis* prevalence of 40.5% among ruminants (Isah, 2019): the sample size was calculated using the formula for estimating a population proportion:

$$n = \frac{Z^2 \times P \times (1 - P)}{d^2}$$

Where:

n = required sample size

Z = Z-value (1.96 for 95% confidence level)

P_{exp} = estimated prevalence (based on previous studies is 40.5% or 0.405)

d = desired precision (5% or 0.05)

Substituting the values:

$$n = \frac{(1.96)^2 \times 0.405 \times (1 - 0.405)}{(0.05)^2} = 355$$



To accommodate possible data losses or errors, a 10% buffer was added, resulting in an adjusted sample size of 390. However, a total of 3,510 fecal samples were collected to enhance the power and representativeness of the study. The distribution of samples was as follows:

- a) Cattle: 1,752 samples
- b) Sheep: 1,060 samples
- c) Goats: 698 samples

Sample Collection and Examination

Sample Collection

Fecal samples were collected during both the dry (January–April) and rainy (May–August) seasons of 2024. Samples were obtained immediately post-slaughter directly from the rectum or freshly voided droppings in a clean environment to avoid contamination. Approximately 4 grams of feces were placed into sterile, well-labeled containers. Each sample container was labeled with animal-specific details, including species, sex, age, and abattoir of origin, to ensure traceability. The samples were preserved in 10% formalin solution and transported to the laboratory for parasitological analysis.

Laboratory Examination

Fecal samples were processed at the National Veterinary Research Institute (NVRI): Bauchi branch, using the formol-ether concentration technique a standard parasitological method for detecting helminth eggs in fecal matter. The procedure involved emulsifying a measured quantity of feces in 10% formalin, filtering the mixture through gauze to remove debris, adding diethyl ether, and centrifuging the mixture. After discarding the supernatant, the sediment was examined microscopically for *Fasciola* eggs. This method improves the sensitivity of parasite detection, particularly in samples with low egg concentrations.

Statistical Analysis

Data were analyzed using SPSS version 25.0. The prevalence of *fascioliasis* was calculated as the percentage of infected animals among the total examined, using the formula:

$$\text{Prevalence (\%)} = \left(\frac{\text{Number of infected animals}}{\text{Total number of animal examined}} \right) \times 100$$

Descriptive statistics (Percentages) were used to summarize the distribution of infection across variables such as season (rainy/dry): abattoir location, sex, and breed. Associations between *fascioliasis* prevalence and these categorical variables were assessed using the Chi-square (χ^2) test, with significance set at $p \leq 0.05$. Odds Ratios (ORs) were computed to quantify the strength and direction of associations between potential risk factors (e.g., season and sex) and infection status.

The OR was calculated using:

OR = (A/B) / (C/D): where A = exposed cases (e.g., infected animals in the rainy season): B = exposed non-cases (uninfected in the rainy season): C = unexposed cases (infected in the dry season): and D = unexposed non-cases (uninfected in the dry season). An OR > 1 indicates increased odds of infection, OR < 1 suggests a protective effect, and OR = 1 implies no association. Statistical significance was determined at $p < 0.05$.

RESULTS AND DISCUSSION

Prevalence of *Fascioliasis* in Ruminants across Selected Abattoirs in Jos, Plateau State

Table 1 presents result of the prevalence of *Fascioliasis* among ruminants slaughtered in three selected abattoirs in Jos, Plateau State, based on a total of 3,510 samples. At the Jos Central Abattoir, out of 1,170 samples examined, 150 were positive while 1,020 were negative, resulting in a prevalence rate of 12.8%. Similarly, *Bulbula* Neighborhood Abattoir recorded 100 positive cases and 1,070 negatives out of 1,170 samples, given a prevalence of 8.5%. At the *Yan-Ganda* Neighborhood Abattoir, 120 samples tested positive while 1,050 were negative, also from 1,170 samples, with a corresponding prevalence of 10.2%. Cumulatively, out of 3,510 samples collected across the three locations, 370 were positive and 3,140 negative, leading to an overall prevalence rate of 10.5%. A chi-square analysis yielded a value of $\chi^2 = 11.48$ with a p-value of 0.00, indicating a statistically



significant difference ($P < 0.05$) in the prevalence of *Fascioliasis* among the abattoirs. The overall prevalence of 10.5% suggests a moderate level of endemicity, comparable to the 9.89% prevalence reported by Edo-Taiwo and Ehimuan (2024) in Ikpoba/Okha LGA, Edo State. The highest prevalence observed at the Jos Central Abattoir may reflect differences in environmental conditions, animal sourcing patterns, or management practices compared to the other locations. The statistically significant variation supports the likelihood that local ecological and managerial factors such as pasture contamination, water body proximity, and snail vector distribution play a role in transmission dynamics. In contrast, much higher prevalence rates have been documented in other parts of Nigeria: 27.68% in Sokoto (Magaji *et al.*, 2014), 13.67% in Borno (Liba *et al.*, 2018), and 48.5% in northern Bauchi (Isah, 2019). These elevated rates are often attributed to favorable conditions for *Lymnaea* spp., the intermediate host, including stagnant water bodies, prolonged wet seasons, and poor grazing hygiene. The lower rates in Jos may suggest relatively better abattoir sanitation, effective meat inspection, or reduced ecological suitability for snail breeding, as well as seasonal variation in sampling. Additionally, the findings may point to ongoing but unevenly implemented control measures that have had partial success in reducing the parasite burden. Overall, the data indicate that while *fascioliasis* remains a concern in Jos, its prevalence is relatively contained compared to more endemic regions, warranting continued surveillance and targeted intervention strategies to limit its spread (Purwaningsih *et al.*, 2022; Hadebe *et al.*, 2023).

Table 1: Prevalence of *Fascioliasis* in Ruminants across Selected Abattoirs in Jos, Plateau State

Abattoir	No. of Samples (N=3,510)	Positive Cases (O ₁)	Negative Cases (O ₂)	Prevalence (%)
Jos Central Abattoir	1,170	150	1,020	12.80
<i>Bulbula</i> Neighborhood Abattoir	1,170	100	1,070	8.50
<i>Yan-Ganda</i> Neighborhood Abattoir	1,170	120	1,050	10.20
Total	3,510	370	3,140	10.50

$X^2 = 11.48$

DF= 2

P-value = 0.00

Prevalence of *Fascioliasis* in Ruminants Based on Gender across Selected Abattoirs in Jos, Plateau State

Table 2 presents result of the gender-based prevalence of *Fascioliasis* among ruminants (cattle, goats, and sheep) slaughtered at three abattoirs in Jos, Plateau State, based on a total of 3,510 animals examined. Overall, male animals consistently exhibited higher infection rates than females across all species and locations, resulting in a combined prevalence of 17.58%. At Jos Central Abattoir, male cattle recorded a prevalence of 23.4%, slightly higher than the 19.5% observed in females (OR = 1.26). Male goats had a prevalence of 12.9%, compared to 8.5% in females (OR = 1.59), while sheep showed 20.7% in males and 17.6% in females (OR = 1.22). Similar trends were observed at *Bulbula* Abattoir, where male cattle had a prevalence of 22.3% compared to 17.7% in females (OR = 1.32). Goat prevalence stood at 14.2% for males and 6.5% for females (OR = 2.40), while male sheep exhibited 22.0%, versus 14.9% in females (OR = 1.60). At *Yan-Ganda* Abattoir, the pattern persisted: 22.2% in male cattle vs. 18.3% in females (OR = 1.28); 15.2% in male goats vs. 7.1% in females (OR = 2.36); and 24.5% in male sheep vs. 14.4% in females (OR = 1.92). This consistent male-biased prevalence across all three abattoirs may suggest behavioral or physiological factors influencing exposure, such as greater grazing range, higher mobility, or stress susceptibility in males. These findings are in agreement with earlier reports from Sokoto (Magaji *et al.*, 2014) and Bayelsa (Gbeghebo *et al.*, 2023), which also noted higher infection rates in males. However, they contrast with observations from Abuja, where females were more affected (Ogbaje *et al.*, 2024), underscoring the role of regional ecological and management variations. For goats and sheep in particular, the odds ratios for males were notably high, especially in *Bulbula* and *Yan-Ganda* (e.g.,



OR = 2.40 for goats in *Bulbula*), indicating a potentially increased risk of *Fascioliasis* among male small ruminants in these environments. This aligns with seasonal and sex-related findings from Maiduguri (Liba *et al.*, 2018), which attributed such differences to sex-specific grazing behavior and exposure levels. Despite these trends, the overall chi-square test revealed no statistically significant association between sex and *Fascioliasis* prevalence ($\chi^2 = 0.24$; $df = 2$; $p = 0.88$). This suggests that while males consistently show numerically higher prevalence, these differences may not be statistically meaningful at the population level. Factors such as sample size distribution, homogeneity in animal management, and potential confounding variables could contribute to the lack of statistical significance. Hence, while gender-based trends may inform targeted surveillance, sex alone may not be a reliable risk predictor for *Fascioliasis* without considering additional factors like age, season, and animal husbandry practices.

Table 2: Prevalence of *Fascioliasis* in Ruminants Based on Sex across Selected Abattoirs in Jos, Plateau State

Abattoir	Gender	No. of Samples (N=3,510)	Positive Cases (O ₁)	Negative Cases (O ₂)	Prevalence (%)	Odds Ratio (M vs F)
Jos Central Abattoir		1,170	210	960	17.95	
	Cattle	548				1.26
	Male	137	32	105	23.40	
	Female	411	80	331	19.50	
	Goat	234				1.59
	Male	140	18	122	12.90	
	Female	94	8	86	8.50	
	Sheep	388				1.22
	Male	116	24	92	20.70	
	Female	272	48	224	17.60	
<i>Bulbula</i> Neighborhood Abattoir		1,142	196	946	17.16	
	Cattle	556				1.32
	Male	139	31	108	22.30	
	Female	417	74	343	17.70	
	Goat	234				2.40
	Male	141	20	121	14.20	
	Female	93	6	87	6.50	
	Sheep	380				1.60
	Male	118	26	92	22.00	
	Female	262	39	223	14.90	
Yan-Ganda Neighborhood Abattoir		1,198	211	987	17.61	
	Cattle	648				1.28
	Male	162	36	126	22.20	
	Female	486	89	397	18.30	
	Goat	230				2.36
	Male	145	22	123	15.20	
	Female	85	6	79	7.10	
	Sheep	292				1.92
	Male	98	24	74	24.50	
	Female	194	28	166	14.40	
Total		3,510	617	2,893	17.58	

$X^2 = 0.24$

DF= 2

P-value = 0.88



Prevalence of *Fascioliasis* in Ruminants Based on Seasonal Variation across Selected Abattoirs in Jos, Plateau State

The result of seasonal prevalence of *fascioliasis* among cattle, goats, and sheep slaughtered at three abattoirs in Jos is presented in Table 3. The overall prevalence was 15.92% (559 positive cases), with consistently higher rates during the rainy season across all species and abattoirs. At Jos Central Abattoir (n = 1,170; prevalence = 15.73%), cattle prevalence was 19.7% in the rainy season versus 15.3% in the dry season (OR = 1.35). Goats showed 13.7% rainy and 10.3% dry (OR = 1.39), while sheep had 16.5% rainy and 14.4% dry (OR = 1.17). At *Bulbula* Abattoir (n = 1,142; prevalence = 15.14%), cattle prevalence was 17.3% rainy and 13.7% dry (OR = 1.32); goats 15.4% rainy and 12.0% dry (OR = 1.34); sheep 15.8% rainy and 13.2% dry (OR = 1.24). *Yan-Ganda* Abattoir (n = 1,198; prevalence = 16.86%) showed the largest seasonal difference, with cattle rising from 17.3% dry to 22.2% rainy (OR = 1.37), goats from 8.7% dry to 13.9% rainy (OR = 1.71), and sheep from 15.1% dry to 17.8% rainy (OR = 1.23). Although odds ratios (1.17 to 1.71) indicate a higher risk during the rainy season, the seasonal differences were not statistically significant across abattoirs and species ($\chi^2 = 1.33$, df = 2, p = 0.51). This suggests that while a seasonal pattern exists, it was not strong enough to reach significance in this study. These results align with established epidemiological knowledge that *fascioliasis* transmission is influenced by environmental and seasonal factors, especially the abundance of water and intermediate snail hosts like *Lymnaea* spp. during the rainy season, which facilitates completion of the *Fasciola* life cycle and raises infection risk in grazing animals (Dube *et al.*, 2023; Galavani *et al.*, 2024; Hadebe *et al.*, 2025). Comparative studies show mixed seasonal patterns: Liba *et al.* (2018) reported higher prevalence in the dry season (15.3%) than rainy (12.0%) in Maiduguri, contrasting Jos; Isah (2019) observed higher rainy season prevalence (47.2%–58.4%) in Northern Bauchi, consistent with this study. Internationally, Garg *et al.* (2009) found cattle and buffaloes peaked in winter, goats and sheep in the rainy season in India. In Malaysia, Muhammad Faez *et al.* (2023) reported 50–58% prevalence in wet season versus 30–45% dry season. Within Nigeria, Yatswako and Alhaji (2017) also found peak prevalence during the rainy season in North-central regions, supporting the findings in Jos. The repeated rainy season peaks highlight the need to time control interventions such as deworming and pasture management to periods of highest transmission risk.

Table 3: Prevalence of *Fascioliasis* in Ruminants Based on Seasonal Variation across Selected Abattoirs in Jos, Plateau State

Abattoir	Season	No. of Samples (N=3,510)	Positive Cases (O ₁)	Negative Cases (O ₂)	Prevalence (%)	Odds Ratio
Jos Central Abattoir		1,170	184	986	15.73	
	Cattle	548				1.35
	Rainy	274	54	220	19.70	
	Dry	274	42	232	15.30	
	Goat	234				1.39
	Rainy	117	16	101	13.70	
	Dry	117	12	105	10.30	
	Sheep	388				1.17
	Rainy	194	32	162	16.50	
	Dry	194	28	166	14.40	
Bulbula Neighborhood Abattoir		1,142	173	969	15.14	
	Cattle	556				1.32
	Rainy	278	48	230	17.30	
	Dry	278	38	240	13.70	
	Goat	234				1.34
	Rainy	117	18	99	15.40	
	Dry	117	14	103	12.00	
	Sheep	380				1.24
	Rainy	190	30	160	15.80	
	Dry	190	25	165	13.20	
Yan-Ganda Neighborhood Abattoir		1,198	202	996	16.86	
	Cattle	648				1.37
	Rainy	324	72	252	22.20	
	Dry	324	56	268	17.30	
	Goat	230				1.71
	Rainy	115	16	99	13.90	
	Dry	115	10	105	8.70	
	Sheep	292				1.23
	Rainy	146	26	120	17.80	
	Dry	146	22	124	15.10	
Total		3,510	559	2,951	15.92	

$X^2 = 1.33$

DF = 2

P-value = 0.51

Prevalence of *Fascioliasis* in Ruminants Based on Breeds across Selected Abattoirs in Jos, Plateau State

Table 4 presented result of the breed-specific prevalence of *fascioliasis* among ruminants across three abattoirs in Jos, Plateau State, based on 3,510 samples. The overall prevalence was 17.58%, indicating moderate endemicity in the region. At Jos Central Abattoir, cattle had the highest prevalence (22.63%), with White Fulani (23.03%) slightly exceeding Red Bororo (22.02%) OR = 1.23. This supports earlier findings suggesting higher susceptibility in White Fulani due to their extensive grazing habits and exposure to waterlogged areas (Obi *et al.*, 2020; Dada & Jegede, 2019). Among goats, Red Sokoto (12.14%) and West African Dwarf (12.77%) had similar rates (OR = 0.59). Sheep prevalence was 18.56%, with Yankasa at 18.75% and Balami at 18.24% (OR = 0.96), indicating minimal breed difference. At Bulbula Abattoir, cattle prevalence was 17.63%, with White



Fulani at 18.24% and Red Bororo at 16.67% (OR = 1.08). Goats recorded 10.68% prevalence, with Red Sokoto at 13.48% and WAD at 6.45% (OR = 0.60), again showing lower susceptibility in WAD goats. Sheep showed 17.37% prevalence, Balami (19.74%) had higher rates than Yankasa (14.04%), yielding an OR of 1.06. At *Yan-Ganda* Abattoir, cattle prevalence stood at 18.21%, with Red Bororo (18.63%) slightly higher than White Fulani (17.92%), OR = 1.09. Goat prevalence was 11.74% (Red Sokoto: 13.79%; WAD: 8.24%; OR = 0.70). For sheep, Balami again showed higher prevalence (25.44%) than Yankasa (14.61%), producing the highest sheep-related odds ratio (OR = 1.30). Across all abattoirs, cattle consistently had the highest prevalence (17.49%–22.63%). This aligns with existing literature (Ozung *et al.*, 2011; Liba *et al.*, 2018; Oluwaremilekun, 2025), which links higher infection in cattle to their grazing near water bodies and marshy areas where *Fasciola metacercariae* are abundant (Hadebe *et al.*, 2023). Goats had the lowest prevalence (6.45%–13.79%), consistent with studies showing that browsing reduces their risk of ingesting metacercariae (Kiros *et al.*, 2012; Isah, 2019; Purwaningsih *et al.*, 2022). Red Sokoto goats consistently showed higher rates than WAD goats, possibly due to broader exposure during transhumance or environmental adaptability (Kaufmann, 1996). Sheep prevalence ranged from 14.04% to 25.44%, with Balami sheep generally more affected than Yankasa. The particularly high rate in Balami at *Yan-Ganda* (25.44%) may reflect breed-specific vulnerability or greater environmental exposure (Dube *et al.*, 2023). Studies indicate that Balami, typically reared in extensive systems, have a wider grazing range, increasing their contact with contaminated areas (Agaviezor *et al.*, 2012; Yaro *et al.*, 2022; Jegede *et al.*, 2015). Although breed-related variations were evident, differences were not statistically significant ($\chi^2 = 3.37$, $df = 2$, $p = 0.18$). Nonetheless, odds ratios above 1.0 in cattle and Balami sheep suggest potential breed–species susceptibility. These findings highlight the need to consider breed, grazing behavior, and management systems in *fascioliasis* control strategies. While cattle are the most affected, periodic monitoring and targeted deworming, especially for high-risk breeds like White Fulani and Balami, this may help curb transmission and reduce economic losses in endemic regions like Jos (Purwaningsih *et al.*, 2022; Hadebe *et al.*, 2023).

Table 4: Prevalence of *Fascioliasis* in Ruminants Based on Breeds across Selected Abattoirs in Jos, Plateau State

Abattoir	Breed	No. of Samples	Positive Cases (O ₁)	Negative Cases (O ₂)	Prevalence (%)	Odd ratio (OR)
Jos Central Abattoir	Cattle	548	124	424	22.63	1.23
	White Fulani	330	76	254	23.03	
	Red Bororo	218	48	170	22.02	
	Goat	234	29	205	12.39	0.59
	Red Sokoto	140	17	123	12.14	
	West African Dwarf	94	12	82	12.77	
	Sheep	388	72	316	18.56	0.96
	<i>Yankasa</i>	240	45	195	18.75	
	<i>Balami</i>	148	27	121	18.24	
Bulbula Neighborhood Abattoir		1142	189	953	16.54	
	Cattle	556	98	458	17.63	1.08
	White Fulani	340	62	278	18.24	
	Red Bororo	216	36	180	16.67	
	Goat	234	25	209	10.68	0.60
	Red Sokoto	141	19	122	13.48	
	West African Dwarf	93	6	87	6.45	
	Sheep	380	66	314	17.37	1.06
	<i>Yankasa</i>	228	32	196	14.04	
	<i>Balami</i>	152	30	122	19.74	
Yan-Ganda Neighborhood Abattoir		1198	203	995	16.95	
	Cattle	648	118	530	18.21	1.09
	White Fulani	385	69	316	17.92	
	Red Bororo	263	49	214	18.63	
	Goat	230	27	203	11.74	0.70
	Red Sokoto	145	20	125	13.79	
	West African Dwarf	85	7	78	8.24	
	Sheep	292	58	234	19.86	1.30
	<i>Yankasa</i>	178	26	152	14.61	
	<i>Balami</i>	114	29	85	25.44	
Total		3510	617	2893	17.58	

$X^2 = 3.37$

DF = 2

P-value = 0.18

CONCLUSION AND RECOMMENDATIONS

In conclusion, the study demonstrated an overall *Fascioliasis* prevalence of 10.5% across the three selected abattoirs in Jos, Plateau State, with Jos Central Abattoir recording the highest prevalence of 12.8%, followed by Yan-Ganda Neighborhood with 10.2%, and Bulbula Neighborhood recorded 8.5%. Among the animals examined, cattle showed the highest infection rates, particularly males, with prevalence rates exceeding 22% across all abattoirs. Additionally, seasonal trends revealed a marked increase in *Fascioliasis* cases during the rainy season, highlighting the influence of environmental factors on disease transmission. Given these findings, it is recommended that targeted control strategies be implemented to address the specific risk factors identified. These include prioritizing cattle, especially male animals, for regular screening and treatment. Moreover, intensified



control efforts during the rainy season should be emphasized to reduce the transmission risk. Awareness campaigns for abattoir workers and livestock farmers on preventive measures and early detection are also vital. Lastly, continuous surveillance and further research into regional environmental factors influencing *Fascioliasis* will enhance the development of effective, context-specific intervention programs.

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