

# Prevalence And Epidemiological Distribution of Gastrointestinal Parasites in Equines from Selected Stables in Nigeria

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*Abstract- Gastrointestinal parasitic infections remain a major constraint to equine health and productivity in Nigeria. This study investigated the prevalence and epidemiological distribution of gastrointestinal parasites among equines from selected stables and farms in Nigeria. A total of 100 faecal samples were collected from horses across four study locations comprising the Nigerian Defence Academy Equitation Unit, Kaduna; Cleanwater Farms, Kaduna; ALMAT Farms, Abuja and RIO Hondo Spread Ltd, Plateau State. Samples were examined using flotation and sedimentation techniques for identification of parasite ova and larvae. Out of the 100 samples examined, 67% were positive for one or more gastrointestinal parasites. Strongylus spp. was the most prevalent parasite identified (35.8%), followed by Parascaris equorum (20.9%), Oxyuris equi (14.9%), Strongyloides westeri (13.4%), and Anoplocephala perfoliata (7.5%). The highest prevalence was recorded in horses aged less than 5 years (78.1%), while males had slightly higher infection rates (69.1%) compared with females (64.6%). By breed, local breeds showed higher prevalence than exotic breeds. The Nigerian Defence Academy Equitation Department recorded the lowest prevalence rate (60%), while ALMAT Farms recorded the highest prevalence (72%). The findings indicate that gastrointestinal parasitism remains endemic among equines in Nigeria and could adversely affect performance, endurance, and operational efficiency. Improved deworming schedules, stable hygiene, strategic veterinary surveillance, and routine faecal examinations are recommended to reduce the burden of parasitic infections.*

**Keywords:** Equines, Gastrointestinal Parasites, Prevalence, Horses, Faecal Samples, Nigeria

## I. INTRODUCTION

Equines play significant roles in transportation, sports, ceremonial activities, military operations, and agricultural support systems in Nigeria. Horses, in particular, are extensively utilized in polo sports,

ceremonial guards, military equitation units, and private ranches. However, gastrointestinal parasitic infections remain one of the major challenges affecting equine productivity and performance (Getahun, et al.,2024). Parasitic infections contribute to poor growth, reduced body condition, anaemia, colic, diarrhoea, decreased endurance, and occasional mortality in infected horses. The burden of parasitism is influenced by management practices, climatic conditions, nutrition, stable hygiene, age, breed, and deworming practices (Mesafint, et al.,2023).

Strongyles are among the most pathogenic helminths affecting equines globally, causing significant intestinal damage and reduced performance. Other important parasites include Parascaris equorum, Oxyuris equi, Strongyloides westeri, and cestodes such as Anoplocephala perfoliata. Several studies conducted in Nigeria and other African countries have demonstrated varying prevalence rates of gastrointestinal parasites in horses. Studies conducted in Plateau State and Ibadan reported prevalence rates ranging from 60% to 76%, with Strongylus spp. being the predominant parasite species.

Despite the importance of horses in military and commercial activities, there is limited recent information regarding the prevalence of gastrointestinal parasites among equines in organized stables and farms across Nigeria. Therefore, this study aimed to determine the prevalence and epidemiological distribution of gastrointestinal parasites among horses from selected equitation units and farms in Nigeria (Matto,et al.,2015).

## II. MATERIALS AND METHODS

Study Area

The study was conducted among horses managed within four selected equitation and breeding establishments in Northern Nigeria, namely the Nigerian Defence Academy (NDA) Equitation Department, Cleanwater Farms, ALMAT Farms and RIO Hondo Spread Ltd. These facilities were purposively selected due to their active involvement in horse breeding, training, recreation, and equitation activities, as well as their accessibility for sample collection and veterinary assessment.

The Nigerian Defence Academy Equitation Unit serves as a military equestrian facility where horses are maintained for ceremonial duties, training, sporting activities and mounted drills. The unit accommodates a considerable population of horses under semi-intensive management systems, making it suitable for the assessment of gastrointestinal parasitic infections associated with confined and frequently utilized equines.

Cleanwater Farms is a privately managed livestock and equine establishment involved in horse breeding and general animal husbandry practices. Similarly, ALMAT Farms maintains horses for breeding and recreational purposes under organized farm management conditions. RIO Hondo Spread Ltd also operates an equine management system involving horse breeding, stabling, and training activities. The study locations are situated within the Northern Guinea Savannah ecological zone of Nigeria, an area characterized by tropical savannah vegetation, moderate to high temperatures, and distinct wet and dry seasons. Annual rainfall in the region generally ranges between 1,000 mm and 1,500 mm, while average temperatures range from 25°C to 35°C. These environmental conditions provide favorable habitats for the development, survival, and transmission of gastrointestinal parasites and their infective stages within grazing fields, paddocks, and stable environments.

Furthermore, the management systems practiced within these establishments, including communal grazing, stable confinement, pasture exposure and varying deworming schedules, may influence the epidemiology and distribution of equine gastrointestinal parasites. The selection of these study areas therefore provided an appropriate

representation of equine management systems commonly practiced in Northern Nigeria.

#### Sample Collection

A total of 100 fresh faecal samples were collected directly from the rectum or immediately after defecation using sterile gloves and labeled appropriately. Twenty-five samples were collected from each study location.

#### Sample Collection

Fresh faecal samples were collected directly from the rectum of horses using disposable gloves and placed in sterile sample containers. Each sample was properly labelled according to age, sex, breed and location.

#### Laboratory Analysis

Samples were examined using standard flotation and sedimentation techniques for identification of parasite eggs and larvae under light microscopy.

#### Statistical Analysis

Data obtained were analyzed using descriptive statistics. Prevalence was expressed as percentages. Chi-square analysis was used to determine associations between prevalence and risk factors such as age, sex, breed, and location at a significance level of  $p < 0.05$ .

### III. RESULTS

#### Overall Prevalence of Gastrointestinal Parasites

Out of the 100 faecal samples examined, 67 were positive for gastrointestinal parasites, giving an overall prevalence of 67%.

Study Location	Number of Samples
Nigerian Defence Academy Equitation Unit	25
Cleanwater Farms	25
ALMAT Farms	25
RIO Hondo Spread Ltd	25
Total	100

Table 1: Prevalence of Gastrointestinal Parasites by Study Location

Study Location	Number Examined	Number Positive	Prevalence (%)
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Study Location	Number Examined	Number Positive	Prevalence (%)
Nigerian Defence Academy Equitation	25	15	60
Cleanwater Farms	25	17	68
ALMAT Farms	25	18	72
RIO Hondo Spread Ltd	25	17	68
Total	100	67	67

**Distribution of Identified Parasites**

Strongylus spp. was the most prevalent parasite identified.

Table 2: Distribution of Identified Gastrointestinal Parasites

Parasite Species	Frequency	Percentage (%)
Strongylus spp.	24	35.8
Parascaris equorum	14	20.9
Oxyuris equi	10	14.9
Strongyloides westeri	9	13.4
Anoplocephala perfoliata	5	7.5
Mixed infections	5	7.5
Total	67	100

**Prevalence According to Age**

Table 3: Age Distribution of Gastrointestinal Parasites

Age Group	Number Examined	Number Positive	Prevalence (%)
< 5 years	32	25	78.1
5–10 years	48	31	64.6
> 10 years	20	11	55.0
Total	100	67	67

**Prevalence According to Sex**

Table 4: Sex Distribution of Gastrointestinal Parasites

Sex	Number Examined	Number Positive	Prevalence (%)
Male	55	38	69.1
Female	45	29	64.4
Total	100	67	67

**Prevalence According to Breed**

Table 5: Breed Distribution of Gastrointestinal Parasites

Breed	Number Examined	Number Positive	Prevalence (%)
Local breeds	40	30	75.0
Exotic breeds	60	37	61.7
Total	100	67	67

The line graph below illustrates the prevalence of gastrointestinal parasites across the four study locations. Nigerian Defence Academy Equitation Unit showed the lowest prevalence (60%), followed by Cleanwater Farms and RIO Hondo Spread Ltd (68%), while ALMAT Farms recorded the highest prevalence (72%).

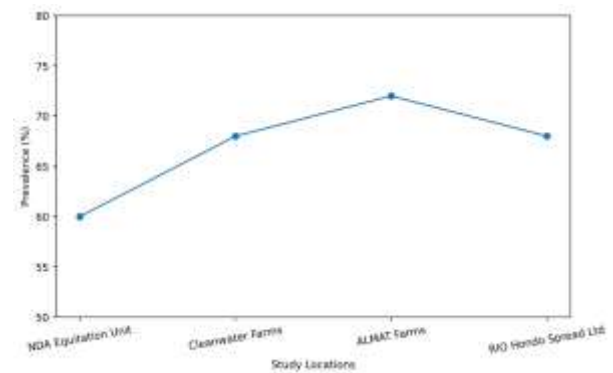


Figure 1: Line Graph Showing Prevalence Across Study Locations

Study Location	Prevalence (%)
NDA Equitation Unit	60
Cleanwater Farms	68
ALMAT Farms	72
RIO Hondo Spread Ltd	68

The prevalence trend indicates relatively high gastrointestinal parasitic burden across all study facilities.

**IV. DISCUSSION**

The present study revealed an overall prevalence of 67% gastrointestinal parasitic infection among horses sampled from selected equine establishments in

Nigeria. This finding agrees with previous studies conducted in Nigeria that reported prevalence rates ranging from 60% to 76% among horses. The prevalence observed in this study is comparable with the findings of Golshang et al. (2024), who reported a prevalence rate of 66.3% among polo horses in Plateau State, Nigeria. Similarly, Alaba et al. (2022) reported high prevalence of gastrointestinal parasites among polo horses in Ibadan, Nigeria. The relatively high prevalence observed may be associated with favorable tropical climatic conditions, communal grazing systems, inadequate stable hygiene and irregular deworming schedules. *Strongylus* spp. was identified as the most prevalent parasite in the present study. This agrees with earlier reports by Umar et al. and Wosu and Udobi, who identified *Strongylus* spp. as the predominant gastrointestinal parasite among horses in northern Nigeria. *Strongyles* are known to persist under tropical environmental conditions and are highly pathogenic due to their migratory larval stages.

Young horses below 5 years recorded the highest prevalence rate (78.1%). This finding agrees with previous reports indicating that younger horses are more susceptible to gastrointestinal parasites due to immature immunity and increased environmental exposure. Older horses generally develop partial immunity following repeated exposure. Male horses recorded slightly higher prevalence compared with females. Although the difference was not statistically significant, the finding may be associated with increased physical activities, training intensity and stress among male horses.

Local breeds demonstrated higher prevalence than exotic breeds. This may be attributed to differences in management practices, nutritional supplementation, and veterinary care. Exotic breeds are often subjected to improved management and routine prophylactic treatments. Among the study locations, the ALMAT Farms recorded the highest prevalence. This may be associated with higher stocking density and increased movement of horses during training and ceremonial activities. The findings of this study emphasize the need for improved parasite control strategies in equine establishments across Nigeria. Routine faecal examinations, strategic deworming programs,

improved sanitation, and pasture management remain essential in reducing parasite transmission.

## V. CONCLUSION

This study demonstrated that gastrointestinal parasitic infections remain highly prevalent among horses in selected equine facilities in Nigeria, with an overall prevalence rate of 67%. The findings revealed that *Strongylus* spp. was the most predominant gastrointestinal parasite identified among the sampled horses. The study further showed that younger horses, particularly those below five years of age, were more susceptible to parasitic infections compared with older horses, while local breeds recorded higher infection rates than exotic breeds. The high prevalence observed in this study suggests that gastrointestinal parasitism continues to constitute a major health challenge affecting horses in Nigeria. The persistent occurrence of these parasites poses significant threats to equine health, including poor body condition, reduced endurance, anaemia, weight loss, digestive disturbances and decreased overall performance. These effects may negatively influence the operational efficiency of military equitation units, ceremonial horse formations, polo activities, and commercial horse farms where optimal horse performance is required. The findings also indicate possible deficiencies in stable hygiene, deworming practices and routine veterinary management across some of the study locations. In view of the findings obtained from this study, there is a need for the implementation of regular and comprehensive parasite control programmes in equine establishments throughout Nigeria. Routine faecal examinations should be conducted periodically to enable early detection and monitoring of gastrointestinal parasites in horses. Strategic deworming programmes using effective broad-spectrum anthelmintics should also be adopted to reduce parasite burden and minimize the development of anthelmintic resistance. Furthermore, improved stable sanitation and proper disposal of faecal waste are essential in reducing environmental contamination and interrupting parasite transmission cycles. Horse stable overcrowding should be minimized to reduce the rate of parasite spread among animals, while nutritional supplementation and adequate veterinary surveillance should be strengthened to improve the immune status

and overall health of horses. In addition, awareness and training programmes should be organized for horse handlers, stable managers, and equitation personnel on best practices for parasite prevention and control. Finally, further molecular and epidemiological studies are recommended to investigate the patterns of anthelmintic resistance among equine gastrointestinal parasites in Nigeria and to provide updated information necessary for effective parasite management strategies.

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