ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 17, Issue, 09, pp.34681-34683, September, 2025
DOI: https://doi.org/10.24941/ijcr.49530.09.2025

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

PREVALENCE OF GASTROINTESTINAL HELMINTHS PARASITES IN CHICKENS

***Quazi Saleemoddin Habiboddin**

Associate Professor, Dept of Zoology Milliya Arts Science and Management Science College, BEED, Maharashtra

ARTICLE INFO

Article History:
Received 20th June, 2025
Received in revised form
24st July, 2025
Accepted 29th August, 2025
Published online 30th September, 2025

Keywords:

Cestodes, Nematodes, Gastrointestinal parasites, Prevalence, Local Chicken.

***Corresponding author:**
Quazi Saleemoddin Habiboddin

ABSTRACT

The prevalence of gastrointestinal helminths of local chickens in Beed district Maharashtra India was studied using a total of 250 intestines of backyard chickens were collected from the chicken outlets of local poultry slaughter houses located in and around Beed district in maharashtraa The birds were sacrificed humanely and their oesophagus, crop, proventriculus, gizzard, small intestine and caecum examined for the presence of gastrointestinal helminths. Worms when present were isolated and identified using standard parasitological procedures. The study identified four species of cestodes namely *Raillietinaechinobothridia, R. tetragona, R. cesticillus* and *Choanotaenia infundibulum* and two species of nematodes namely, *Ascaridia galli* and *Heterakisgallinarum.* Results obtained showed 96.8 % prevalence of gastrointestinal helminth parasites in the birds with cestodes being the more prevalent class (70.4 %). *Raillietinaspp* was the most prevalent cestode encountered and *A. galli* the most prevalent nematode. Prevalence rates of infections recorded 14.4 % for nematode species, 26.4 % for cestodes and 56 % for mixed infections of nematodes and cestodes. It was concluded that local chickens are common in the area and could serve as a potential source of helminth infections to intensively managed birds in the study area.

Citation: Quazi Saleemoddin Habiboddin. 2025. "Prevalence of Gastrointestinal Helminths Parasites in Chickens". *International Journal of Current Research, 17, (09), 34681-34683.*

INTRODUCTION

Gastrointestinal helminths such as nematodes, trematodes, and cestodes are widely recognized for their economic and health impacts on poultry, especially in chickens (Anders, 2020). These parasites are prevalent in the poultry industry globally, causing significant reductions in productivity and health, particularly in free-range and rural village setups. Gastrointestinal parasitism often leads to substantial economic losses, even at low infection levels, and remains a serious challenge due to its largely subclinical effects (Mekuria and Bayessa, 2017). Concurrent infections with multiple helminths, especially those affecting the gastrointestinal tract, are linked to early mortality and major productivity losses in adult chickens. Factors such as climate and agro-ecology profoundly influence the prevalence and spread of gastrointestinal helminths, with temperature and humidity altering parasite population dynamics and, thus, the intensity and prevalence of infection (Abdo, 2022). These factors are particularly relevant in tropical regions, where cestode and nematode infections are more prevalent during the rainy season, providing favorable conditions for parasite reproduction and the survival of intermediate hosts (Dube *et al*., 2010). In tropical climates, commonly observed cestodes in chickens include *Raillietinaechinobothrida, Raillietinatetragona, Raillietinacesticillus, Davaineaproglottina, Choanotaenia infundibulum, Amoebotaenia cuneata, Hymenolepis carioca,* and *Hymenolepiscantaniana* . Nematodes, which are among the most prevalent and significant helminths in poultry, are represented by over 50 species worldwide. Key nematode species include *Ascaridia galli*, *Heterakisgallinarum,* and various *Capillaria* species affecting gastrointestinal tracts (crop, jejunum and cecum), while *Syngamus trachea* ("gapeworm") infects the respiratory tract (trachea and lungs). These nematodes, characterized by their spindle-shaped bodies and creamy-yellow color, are found throughout the digestive system and respiratory tract, with *Capillaria annulata* and *Capillariaobsignata* infecting the crop and intestine, respectively, while *Ascaridia galli* and *Heterakisgallinarum* typically inhabit the jejunum and cecum (Afolabi *et al*., 2016).

Cestodes (tapeworms) in hens cause significant economic losses in the poultry industry by decreasing feed conversion, reducing weight gain, lowering egg production, and causing mortality, especially in young birds. These economic impacts stem from the direct damage the parasites inflict on the intestine, leading to poor nutrient absorption and overall poor health. Research papers document this issue, focusing on the prevalence of cestodes in various chicken populations and the productivity losses associated with their infections, highlighting the need for effective control strategies, particularly in rural and free-range systems where infection risks are higher.

Economic Impacts

- **Reduced Productivity:**Cestodes lead to reduced weight gain, lower feed conversion ratios, and decreased egg production.
- **Mortality:** Infections, particularly in young birds, can cause high mortality rates, leading to significant economic losses.
- **Malnutrition and Weakness:** The intestinal damage from parasites results in malnutrition, emaciation, and general weakness in affected birds.
- **Increased Disease Susceptibility:** Parasitized birds are more vulnerable to other diseases, further impacting flock health and productivity.

In India , poultry farming has grown considerably, offering significant employment opportunities, especially for women and youth. However, nematode and cestode infections are serious challenges for local free-range chickens, contributing to both population declines and production losses (Dube *et al*., 2010). Although the global burden of gastrointestinal helminths in chickens is well-established, further epidemiological studies are needed to capture the shifting infection dynamics and inform control measures adapted to these local conditions (Berhe *et al*., 2019).

Many studies on specific species of gastrointestinal nematodes in chickens have been conducted across different regions . However, much research is needed on the prevalence, distribution, species identification, or associated risk factors of gastrointestinal helminths in chickens Despite having a significant chicken population, there is a critical lack of knowledge regarding the impact of gastrointestinal helminths on poultry health.A. Belete {2014} Therefore, this study aimed to determine the prevalence, distribution, and identify the parasitic gastrointestinal helminthes in chickens . By addressing these knowledge gaps, the study provides recent information for the effective prevention and control strategies to improve chicken health and productivity in the region.

MATERIALS AND METHODS

In the present study, a total of 250 intestines of backyard chickens were collected from the chicken outlets of local poultry slaughter houses located in and around Beed district in maharashtraa and brought to the laboratory for processing. The intestines were dissected longitudinally and screened for the presence of parasites. The recovered parasites were washed thoroughly for three times to remove the debris. Then the parasites were processed and mounted as per the standard protocol (Bowman 2009).

The species identification was done based on the morphological characters and micrometry as per (Soulsby 1982). Intestinal contents were also examined by sedimentation and flotation methods as per the procedure of Bowman (2009) for the presence of parasitic egg/ova. The faecal samples found positive for coccidian oocysts were kept for sporulation at room temperature using 2.5 % potassium dichromate solution. The sporulation was observed by every 12 h intervals. Then, the sporulated oocysts were used for speciation based on morphology, micrometry and time taken for sporulation as per Soulsby (1982).

RESULTS AND DISCUSSION

The present study revealed the overall prevalence of gastrointestinal helminth parasites in chickens was (68.5 %) in the study area. The recorded prevalence was relatively similar to the previous prevalence of (65 %) done by (Ashenafi and Eshetu, 2004) in central and northern parts of Ethiopia. This prevalence was lower than (90.6 %) reported by (Berhe *et al*., 2019) and (100 %) by (Phiri *et al*., 2007) in central Zimbabwe. From the total of 250 coprologically examined chickens, 69.1 % (289/418) (95 %CI = 63.8–73.2) were found to be infected with gastrointestinal helminth parasites, which comprised of three species of nematodes and two species of cestodes. The nematode species identified were *Ascaridia galli* 87 (20.8 %), *Heterakisgallinarum* 52 (12.4 %) and *Capillaria* spp. 2 (0.4 %). The cestode parasites were *Raillietina* spp. 66 (15.7 %) and *Davaineaproglottina* 44 (10.5 %).

Table 1. Prevalence of gastro-intestinal parasites in backyard chicken of Shimoga region

	Species	No. positive	% Positive	Total positive
Cestodes	*Raillietinatetragona*	73.0	77.60	94 (51.36 %)
	Raillietinaechinobothrida	12.0	12.80	
	Raillietinacesticellus	09.0	09.60	
Nematodes	*Ascaridia galli*	33.0	62.30	53 (28.96 %)
	Heterakisgallinarum	12.0	22.60	
	Ascaridia galli & *Heterakisgallinarum*	08.0	15.10	
Mixed infection	Cestodes and Nematodes	36.0	19.67	36 (19.67)
Total screened	250	183.0 (73.20 %)		

The majority of the species identified in this study have been reported as potentially pathogenic for poultry, inducing ulcerations and nodule formations and varying degrees of enteritis leading to diarrhoea, anorexia, depression, emaciation and death if untreated (Soulsby 1982). Also, such parasitized free-range birds can be sources of infections to more intensively managed poultry through contaminated equipments and animal handlers.•Perimin *et al* {2023} In addition, the finding of *H. gallinarum* in this study is particularly significant due to its association with *Histomonas meleagridis,* the causal agent of blackhead of poultry especially in domesticated turkey (Soulsby 1982); as such these birds could act as reservoirs of the disease. Therefore, the results obtained from this work points alarmingly to the possible economic losses that may arise from these high levels of infection among free range local chickens.

REFERENCES

Belete, A. 2014. Prevalence of gastrointestinal helminth parasites of the domestic fowl Gallus-gallus domesticus slaughtered in Giwa market, Giwa local government, area, Kaduna state, Nigeria. J Nat Sci Res. 2014; 419:120–125. Google Scholar

Afolabi *et al*., 2016. Prevalence of Gastrointestinal Parasites in Local and Exotic Breeds of Chickens in Pankrono – Kumasi, GhanaJ. Parasitol. Res. 79 211-213.

Ashenafi and Eshetu, 2004. Review on major gastrointestinal parasites that affect chickens review on major gastrointestinal parasites that affect chickensJ. Biol. Agric. Healthc.Vol 34 9 78-80.

Berhe., 2019. Study on effects and occurrence of nematodes in local and exotic chickens in and around Bahir Dar, Northwest EthiopiaAm. J. Sci. Res.Vol 72 98-100.

Bowman 2009. The study on prevalence of gastrointestinal helminths cestodes, nematodes, and trematodes in chickens, Dalomana district, Bale zone, DalJ. World's Poult. Nutr. 79 8 56-59.

Dube, M. Das., 2020. Gastrointestinal parasites in backyard poultry of subtropical hilly region of gastrointestinal parasites in backyard poultry of subtropical hilly region of MeghalayaJ. Entomol. Zool. Stud.

Mekuria and Bayessa, 2017. Intestinal parasites of domestic chickens gallus gallusdomesticus in Akure, NigeriaJ. Biomed.

Perimin A, Magwisha H, Kassuku AA, Nansen P, Bisgaard M, Frandsen F, Gibbons L. 2023. A cross-sectional study of helminthes in rural scavenging poultry in Tanzania in relation to season and climate. J Helminthol. 1997; 71:233–240. doi: 10.1017/S0022149 X00015972. DOI PubMed Google Scholar

Phiri IK, Phiri AM, Ziela M, Chota A, Masuka M, Monrad J. 2007. Prevalence and distribution and distribution of gastrointestinal helminths and their effects on weight gain in free range chicken in Central Zambia. Trop Anim Health Prod. 2007;39:309–315. doi: 10.1007/s11250-007-9021-5. DOI PubMed Google Scholar

Soulsby EJ.1982. Helminth, arthropods and protozoa of domesticated animals. 7. London: Bailliere Tindall; . Google Scholar

****