



E-ISSN: 2320-7078

P-ISSN: 2349-6800

JEZS 2017; 5(5): 1425-1427

© 2017 JEZS

Received: 01-07-2017

Accepted: 02-08-2017

**M Sivakumar**

Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, Orathanadu,  
Thanjavur, Tamil Nadu  
Veterinary and Animal Sciences  
University, Tamil Nadu, India

**S Krishnakumar**

Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, Orathanadu,  
Thanjavur, Tamil Nadu  
Veterinary and Animal Sciences  
University, Tamil Nadu, India

**S Yogeshpriya**

Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, Orathanadu,  
Thanjavur, Tamil Nadu  
Veterinary and Animal Sciences  
University, Tamil Nadu, India

**M Venkatesan**

Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, Orathanadu,  
Thanjavur, Tamil Nadu  
Veterinary and Animal Sciences  
University, Tamil Nadu, India

**MK Vijayasarithi**

Department of Parasitology,  
Veterinary College and Research  
Institute, Orathanadu,  
Thanjavur, Tamil Nadu  
Veterinary and Animal Sciences  
University, Tamil Nadu, India

**P Selvaraj**

Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, Orathanadu,  
Thanjavur, Tamil Nadu  
Veterinary and Animal Sciences  
University, Tamil Nadu, India

**Correspondence****S Krishnakumar**

Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, Orathanadu,  
Thanjavur, Tamil Nadu  
Veterinary and Animal Sciences  
University, Tamil Nadu, India

## Multiple gastrointestinal nematodal and cestodial parasitoses in a backyard fowl

**M Sivakumar, S Krishnakumar, S Yogeshpriya, M Venkatesan, MK Vijayasarithi and P Selvaraj**

### Abstract

Concurrent nematodal and cestodial parasitic infections was documented in a backyard free ranging poultry flock in the delta region of Thanjavur in Tamilnadu. The flock had a history of dull and depressed birds with reduced body weight and was not taking feed and water for past 3 days. Total of 67 birds were examined and out of which one bird was found dead. Clinical investigations revealed multiple gastrointestinal parasites in proventriculus, gizzard and small intestine. Parasites taken from the proventriculus were confirmed as *Dispharynx spiralis*, and worms taken from small intestine were confirmed as *Ascaridia galli* and *Raillietina* spp. Based on these investigations deworming of remaining birds were done with Fenbendazole and Praziquantel at recommended doses. Review after a week revealed no major abnormalities in the flock.

**Keywords:** Backyard poultry, Concurrent parasitoses, *Ascaridia galli*, *Dispharynx spiralis*, *Raillietina* spp.

### Introduction

Free range backyard poultry remains as a significant and sustainable source of additional income for small, marginal and landless farmers and poor people. Health care of these backyard birds are generally neglected at village levels. Presence of gastrointestinal parasites in birds causes severe economic losses in terms of reduced body weight gain, decreased egg production, some time even mortality and affects the quality and quantity of meat production also [1]. These free range birds are susceptible to gastrointestinal parasites due to its scavenging habits. Several researchers documented the prevalence of gastrointestinal parasites of poultry in India [1-5]. This paper describes the study of concurrent infections of Nematodes-*Ascaridia galli* and *Dispharynx spiralis* and Cestode-*Raillietina* spp., in a free ranging desi fowl of the region of Tamilnadu. Reports on *Dispharynx* spp., in backyard birds are uncommon and this case study documents the health threat posed by these worms.

### Materials and Methods

Clinical investigations of a backyard free ranging poultry flock was carried out in July 2017 at Kannai (East) Village, Orathanadu, Thanjavur. The flock had birds having a history of dullness and depression, ruffled feather and was not taking feed and water for past 3 days. They also had reduced body weights. The birds were not vaccinated and dewormed. A total of 67 birds were examined and out of which one bird was found dead. Field postmortem examination of the bird revealed presence of multiple parasites and they were collected for identification.

### Results and Discussion

Poultry carry heavy infection of varied types of parasites, i.e. helminth, protozoans, viruses, and arthropods etc. Intestinal helminth infection has a serious impact on poultry health, productivity, quality and quantity of meat. The prevalence and intensity of helminth infections may be influenced by several factors, such as climatic conditions (temperature and humidity) which alter the population dynamics of the parasites, resulting in dramatic changes in the prevalence and intensity of helminthic infections [6]. Gastrointestinal parasites from free ranging poultry were more commonly reported [2, 3, 5]; but not many reports are there on multiple parasites affecting a bird and causing death.

The Field Postmortem examination in this study revealed that the proventriculus and gizzard had numerous very small round worms. Worms were also noticed in the small intestine, where in numerous tape worms and round worms were observed. These worms were occluding the whole small intestine (Fig.1a) and this occlusion might have resulted in the death of the bird. Early diagnosis of gastrointestinal occlusion in birds is very difficult unless the bird keepers' approaches advanced veterinary facilities for radiographic and ultrasonographic confirmation and for further treatment. Non availability of such facilities in villages and lack of awareness on animal health care facilities among bird keepers often factors in the death of backyard birds. All the worms collected were kept in normal saline solution (Fig.1b) for identification. The parasite identification was done as per [7] and eggs were identified as *A. galli* (Fig.2) Worms taken from small intestine were confirmed as *A. galli* (Fig.3) and *Raillietina spp.* Worms taken from proventriculus were confirmed as *D. spiralis* (Fig.4). The gastrointestinal tract showed pathological lesions such as catarrhal enteritis, ulceration, petechial haemorrhages along with intestinal obstruction. Numerous *D. spiralis* were observed in proventriculus however, they were not associated with any mucosal lesions.

Presence of such multiple parasites in birds indicated the ongoing undetected and unattended challenges in backyard poultry health care. From poor nutrition, poor health care to poor manure disposal, many factors causes severe worm burden in birds. Soil and pasture/grass contamination with affected parasites and their eggs causes continuous presence of worm burden. The concentration of parasite eggs in the environment is one of the factors playing major role in determining the severity of infection in birds. These birds pick up the parasitic eggs/parasites by either ingesting the contaminated feed, water, litter and by eating the earthworms, snails or some insects which act as intermediate hosts and carry their eggs. Such soil contamination is a challenge for the birds in the entire village or hamlets. This necessitates

Ecosystem Surveillance Studies, where in periodical screening of the environments for pathogens and disease causing factors can be undertaken and preventive measures may be instituted. One possible and easy approach could be the students/graduates of Zoology or Life Science Programmes in colleges nearby such villages can take up periodical Ecosystem Surveillance Studies and help their local community know the health threats in their ecosystem and undertake appropriate interventions. The current flock owner never had such organized animal health practices and hence, this kind of worm load and mortality had happened.

Based on the identification of parasites treatment was instituted with combination of drugs-Fenbendazole and Praziquantel as per recommended doses for the rest of the flock. Clinical review of the flock after a week revealed no major abnormalities in the rest of the flock.

Presence of such multiple gastrointestinal parasitoses in backyard poultry calls for promoting awareness among villagers and this can be easily done by local colleges and educational institutions which are located nearby. The Life Science/Zoology Departments can extend their spectrum of activity and actively support their local communities. The village level backyard poultry bird keepers and pigeon keepers neglect the periodical health care practices, resulting in external, internal and blood parasitic infections [8]. Such negligence in health care needs to be avoided. Periodical deworming and health care practices need to be mainstreamed among village poultry keepers at the earliest, so as to safeguard their sustainable economic assets. Need of the hour is that the backyard poultry growers shall access nearby veterinary institutions and get their health advise and undertake periodic deworming, vaccination and preventive healthcare practices without fail. Rural colleges with Zoology/Life Science programme shall help in ecosystem Surveillance Studies at the local villages and intervene effectively for their local community development.

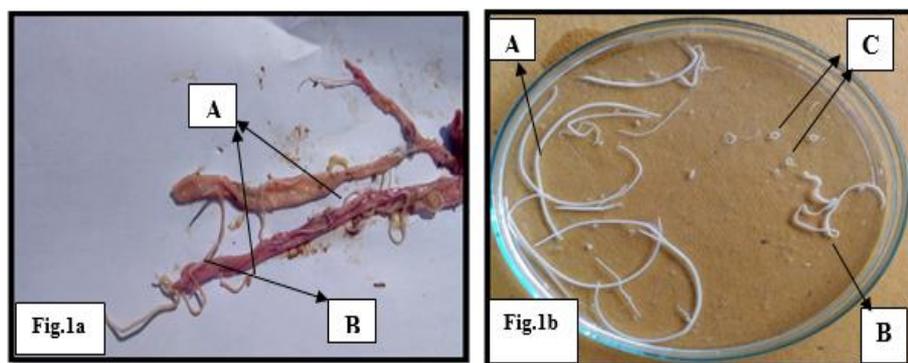


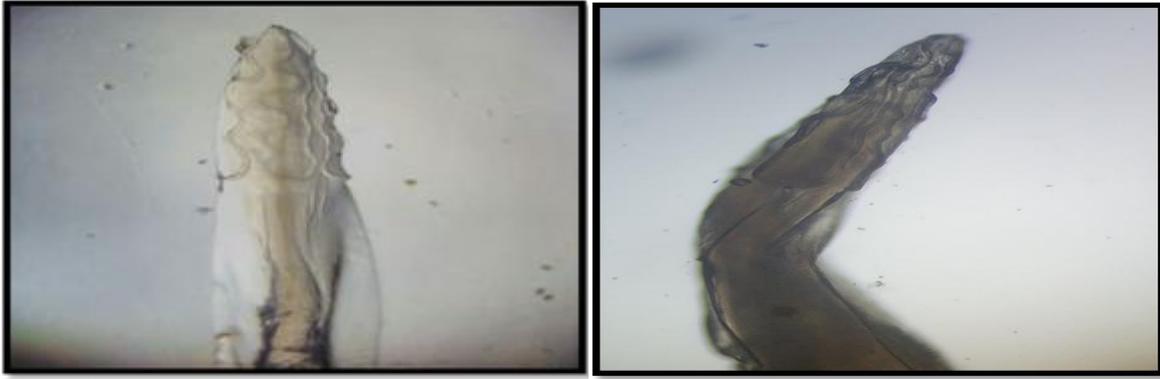
Fig 1: A. *A. galli*, B. *Raillietina* sp., C. *D. spiralis*



Fig 2: *A. galli* egg



Fig 3: *A. galli* head end



**Fig 4:** *D. spiralis* head end

### Conclusion

The present study documented the concurrent presence of multiple gastrointestinal parasites in backyard poultry bird and resultant intestinal occlusion and death. Lack of surveillance studies and health care for backyard birds is the major factor and hence periodical deworming of backyard birds for preventing occurrence of infections can reduce the economic losses for poor people and small farmers. Ecosystem surveillance studies needs to be initiated at the village levels for early identification of health threads to both animals and human beings.

### Acknowledgement

The authors acknowledge The Dean, Veterinary College and Research Institute, Orathanadu, Tamilnadu, India to carry out the study successfully.

### References

1. Sahu S, Anand A, Sinha KP. Studies on the prevalence of helminthic infection in broiler poultry birds from Darbhanga region of North Bihar, India. *Int. j. fauna biol. stud.* 2016; 3(3):87-90.
2. Sonune MB. Analysis of gastrointestinal parasites of poultry birds around Chikhli, Buldana (MS) India. *Science Research Reporter.* 2012; 2(3):274-276.
3. Salam ST. Ascariasis in backyard chicken prevalence, pathology and control. *International Journal of Recent Scientific Research.* 2015; 6(4):3361-3365.
4. Naphade ST. Studies on the prevalence of helminthic Infection in Broiler Poultry Birds from Marathwada Region, (MS) India. *Science Research Reporter Biosciences.* 2013; 3(2):233-238.
5. Puttalakshamma GC, Ananda KJ, Prathiush PR, Mamatha GS, Rao S. Prevalence of Gastrointestinal parasites of Poultry in and around Banglore. *Veterinary World.* 2008; 1(7):201-202.
6. Magwisha H, Kassuku A, Kyvsgaard N, Permin A. A comparison of the prevalence and burdens of helminth infections in growers and adult free range chickens. *Tropical Animal Health Prod.* 2002; 34(3):205-214.
7. Soulsby EJJ. *Helminths arthropods and protozoa of domestic animals.* 7<sup>th</sup> edn, UK, London, 1982.
8. Selvaraj P, Umesh CG, Preethi U, Sumathi D, Nambi AP, Prathaban S. *Haemoproteus columbae* infection in a flock of pigeons. *Indian Journal of Field Veterinarians.* 2013; 9(1):61-62.