Case Report

MULTIPLE HELMINTH INFECTIONS IN BACKYARD NATIVE CHICKEN OF VILLUPURAM DISTRICT OF TAMIL NADU: A CASE REPORT

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ABSTRACT

On post-mortem examination helminthic worms were collected from the intestine of a backyard native chicken in Villupuram district of Tamil Nadu during the month of November 2020. These helminths were identified as Ascaridia galli, Raillietina echinobothrida and Heterakis gallinarum. Mixed helminthic infection was confirmed and documented in backyard native chicken in Villupuram district of Tamil Nadu. These worms are responsible for severe morbidity and indirect economical losses to the farmers. Periodical deworming will be useful to control the worm load in native desi chickens.

Keywords: Backyard native chicken, helminthic infection, Tamil Nadu,Villupuram district

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Backyard native chicken rearing is an additional income generating activity to the rural livelihood in Tamil Nadu. The major advantage of this farming is the involvement of low capital investment. Mostly, chickens that are being reared under extensive system of rearing exposes to the various intermediate hosts that leads to multiple helminthic infections. Helminthiasis is considered as one of the major constraints in poultry production due to tropical and humid climatic conditions of India, which are favourable for faster propagation and development of the larval stages into helminthic parasites (Kulkarni *et al*., 2001). The present study documented the mixed helminthic infection in backyard native chicken in Tindivanam Taluk of Villupuram district in Tamil Nadu.

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Study area

The study was carried out in Veterinary University Training and Research Centre in Villupuram District of Tamil Nadu. The normal annual rainfall in the district is 1029.4 mm received in 63 rainy days followed by south west monsoon contributing 294 mm in 24 rainy days.

The major soil types of the district are red loam and clay loam and the socio-economic status of the families in the region is poor and their livelihood mainly depends on agriculture and animal husbandry related activities.

Collection of samples

On post-mortem examination of the backyard native chicken, worms from the small intestine and caecum were collected in 10% formalin and sent to the Department of Veterinary Parasitology, Veterinary College and Research Institute, Orathanadu, Thanjavur District, Tamil Nadu for identification and analysis

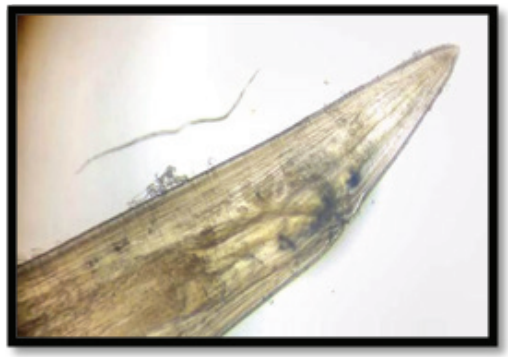
Five tapeworms, 12 round worms and 20 tiny worms were collected from small intestine and caecum respectively in normal saline solution (NSS). Round worms were identified by following the standard parasitological techniques (washing with water, dehydration with ascending grades of alcohol 70%, 90% and 100%, clearing with carbolic acid or lacto-phenol and mounting with DPX mountant). Whereas, tapeworms were fixed under slight cover glass pressure in 10% formalin and stained with aqueous borax carmine. The helminth species were identified according to the description given by Soulsby (2012).

In this study, tapeworms (*Raillietina echinobothrida)* and nematodes (*Ascaridia galli* and *Heterakis gallinarum*) were identified during post-mortem examination of backyard native chicken (Fig. 1).

In similar studies, Bhat *et al*. (2014), Ananda *et al*. (2016) and Vijayasarathi *et al*. (2020) reported that the most common cestodes and nematodes viz, *Raillietina echinobothrida, Ascaridia galli* and *Heterakis gallinarum* in the small intestine of backyard native chicken during post-mortem examination. The probable reason for the mixed helminthic infection might be due to scavenging behaviour in the backyards which contain parasitic eggs and various intermediate hosts or vectors for different helminthic parasites (Permin *et al.,* 1997). These helminthic infections are rarely fatal and are often neglected, but they cause heavy economic loss to poultry farmers due to reduced productivity and some may also act as carriers of pathogenic agents (Katoch *et al*., 2012).

Periodical deworming of backyard native chicken is the only recommended package of practice for preventing incidence of helminthiasis and thereby reduceing the economic losses to poor rural farmers.

A. *Ascaridia galli* – head end showing three lips



B. *Ascaridia galli* – tail end showing circular shaped precloacal sucker

C. *Heterakis gallinarum* - head end showing valvular apparatus in oesophagus

D. *Heterakis gallinarum* – tail end showing unequal spicules

E. *Raillietina echinobothrida* scolex showing circular shaped suckers

Fig. 1. Head and tail ends of tapeworm and round worms

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