



## Gastrointestinal Parasitism in Turkeys and Quails of Umiam, Meghalaya

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### ARTICLE INFO

#### Article history:

Received 26 February 2015

Received Revised Version 1 May 2015

Accepted 5 May 2015

#### Key words:

Turkey, Quail,

*Ascaridia galli*, *Capillaria* sp.

### ABSTRACT

Prevalence of gastrointestinal parasitism in turkeys and quails reared in the poultry farm of ICAR Research Complex for North Eastern Hill Region, Umiam, Meghalaya was carried out by examining faecal samples from 25 turkeys and 100 quails of about 12 and 8 weeks of age, respectively. Faecal samples were collected at weekly intervals for a period of four months. Faecal samples have been subjected to floatation technique using saturated sugar solution. Microscopic examination of faecal samples revealed eggs of *Ascaridia galli* (EPG 50-350) and *Capillaria* sp. (EPG 50-100) in turkeys and only *Ascaridia galli* (EPG 50-300) in quails. Both turkeys and quails are reared under deep litter system.

### 1. Introduction

Turkey (*Meleagris gallopavo*) is a large gallinaceous bird native of North America, domesticated in Europe. In India turkeys are found in good numbers in Kerala, Tamil Nadu, eastern districts of Uttar Pradesh and some other parts of India. They are reared for meat only and the meat of Turkey is the leanest among other domestic avian species. However, Japanese quail (*Coturnix japonica*) is a small sized domesticated bird reared for meat and egg. It grows fast and is ready to market for table purpose at 4-5 weeks of age. Gastrointestinal parasitism is very common in both the birds.

Presence of few parasites does not usually cause a problem. However, large numbers of gastrointestinal parasites can have a devastating effect on growth, egg production and overall health (Butcher and Miles 1992). Natural infections of helminths in the Japanese quail have been reported overseas, mostly from Asia (China, Japan) (Sawada and Funabashi 1972; Wang 1982; Uchida et al. 1984), from the Palaearctic region (Barus and Sonin 1983) and India (Kumar et al. 2003a).

The report of gastrointestinal parasitic infection in turkeys and quails from Meghalaya is not available. So, an attempt has been made to study the prevalence of gastrointestinal parasites in turkeys and quails of hilly region of Meghalaya.

### 2. Materials and methods

To study the prevalence of gastrointestinal parasitism in turkeys and quails reared in the poultry farm of ICAR Research Complex for North Eastern Hill Region, Umiam, Meghalaya pooled faecal samples from 25 turkeys and 100 quails of about 12 and 8 weeks of age, respectively were collected at weekly intervals for a period of four months. Both turkeys and quails are reared under deep litter system. Faecal samples have been subjected to floatation technique using saturated sugar and salt solution (MAFF 1986). The eggs of the helminths were identified after observing the size and morphological characteristics of eggs (Soulsby 1986).

### 3. Results and Discussion

Microscopic examination (100X) revealed presence of eggs of *Ascaridia galli* (EPG 50-350) and *Capillaria* sp. (EPG 50-100) in faecal samples of turkeys (Figure 1) and only eggs of *A. galli* (50-300) in faecal samples collected from quails (Figure 2). In Japanese quails helminth species such as trematode *Pancreatrema coturnicola* (Wang 1982) and kidney trematode *Tanaisia inopina* (Pinto et al. 2005); cestodes *Metroliasthes coturnix* (Sawada and Funabashi 1972) and nematodes *A. galli* and *Heterakis gallinarum* (Movsessian and Pkhrikian 1994) has been reported. Butcher and Miles (1992) reported that large round worms (*A. galli*) probably inflict the most damage especially to the young birds by interfering with feed absorption causing poor growth and production. In severe infections there may be intestinal blockage by the worms causing death.

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Deka and Borah (2008) from Kolkata reported that the total erythrocytic count (TEC), packed cell volume (PCV) and haemoglobin (Hb) percentage decreased significantly in *A. galli* infected quails. The total leucocytic count (TLC), heterophils and eosinophils were also increased significantly in the infected quails. Moreover, Matta and Ahluwalia (1982) and Kumar et al. (2003b) opined that lowered haemoglobin concentration in infected birds was correlated with the activities of early larval stage of *A. galli* in the process of penetration with resultant destruction of mucosa of small intestine and rupture of small blood vessels. Kumar et al. (2003b) also cited that fall of Hb content might be due to metabolic disturbance caused by worms rather than a direct blood loss.

While small round worms (*Capillaria* sp.) infect the intestines causing haemorrhage and thickening of the intestinal walls, leading to poor feed absorption and poor growth *Capillaria* sp. is also associated with squamous cell carcinoma in the oesophagus and crop of birds. Rosa and Shivaprasad (1999) reported presence of *Capillaria contorta* from crop and oesophagus of a 5 year old male vulture guinea fowl. Present study revealed prevalence of *A. galli* and *Capillaria* sp. in the turkeys and Japanese quails of the hilly region of Meghalaya. Thus, as precautionary measures it is necessary to regularly screen the faecal samples of birds to prevent contamination and spread of infection to healthy birds. It could therefore be concluded from this study that Turkeys and Quails of Umiam are suffering from gastrointestinal parasitic infections which will spread the infections to the healthy birds if they are not treated.

### Acknowledgement

Authors are thankful to the Director, ICAR Research Complex for NEH Region, Umiam, Meghalaya for providing facilities to carry out this research work.

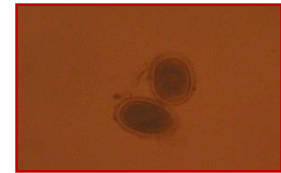
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**Figure 1.** Egg of *Capillaria* sp. (Turkey)

**Figure 2.** Egg of *Ascaridia galli* (Quail)



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