

## Coccidiosis of chicken at Sadar Upazila of Tangail district

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### Abstract

**Context:** Avian coccidiosis causes massive destruction of the epithelial cells, which leads to bloody diarrhea, reduced weight gain and dead.

**Objective:** To observed the frequency of coccidiosis in chicken at sadar upazila, Tangail district.

**Materials Methods:** The present study was conducted at different farms of Tangail sadar upazila, Tangail during the period of 18 March 2013 to 31 August 2013 to identify the coccidiosis infestation in chicken. A total of 1632 birds were examined to identify the coccidiosis in Tangail sadar upazila under Tangail district. The diseases were diagnosed by history, clinical signs, postmortem and microscopic findings.

**Results:** Coccidiosis affection was found 13.97%. In which 20.94% were broiler chickens and 24.62% were layer chickens. The layer birds (24.62%) were more prone to infection with coccidiosis than broiler (20.94%). Coccidiosis affection was highest in Salompur (6.25%) union and lowest in Katuali (0.91). Other diseases encountered in poultry were Brooder pneumonia (17.76%), colibacillosis (12.68%), mycoplasmosis (17.46%), infectious bursal disease (16.85), Newcastle disease (11.34%) and salmonellosis (9.92%).

**Conclusion:** Coccidiosis is fetal disease which more prevalence at Salompur union, Sadar upazila, Tangail.

**Keywords:** Chicken coccidiosis, *Eimeria tenella*, Frequency and Prevalence.

### Introduction

Avian coccidiosis is a parasitic disease of intestinal tract caused by single cell protozoan parasite belonging to genus *Eimeria*. It causes massive destruction of the epithelial cells, which leads to bloody diarrhea, reduced weight gain and temporary reduction in egg production (Dalloul and Lillehoj, 2005). Seven species have been recognized to infect poultry and each species has its own characteristics according to site of infection, immunogenicity and pathogenicity (Williams, 1998; Akhtar *et al.*, 2012). Coccidiosis has been considered as a very harmful disease affecting growth and performance of birds in the intense poultry (Mujahid *et al.*, 2007; Bachayaet *et al.*, 2012) and contributory factor in the pathogenesis of several diseases (Shahzad *et al.*, 2012). Thus coccidiosis is probably the most harmful and wide spread infectious parasitic disease in commercial poultry farms.

In Bangladesh coccidiosis is a serious problem of young chicks and causes a lot of economic loss in poultry industry. The causal agents of coccidiosis in chicken belong to the genus *Eimeria*. Coccidiosis mainly occurred under overcrowding condition with moist and warmth temperature, which favors sporulation of coccidian oocysts? Thus, coccidiosis is especially under intensive poultry operations. Apart from causing diseases and losses, sub-clinical infection (i.e., mild infection without showing symptoms) causes defective feed conversion and emaciation (Karim and Trees, 1990). Therefore, the objective of the present study was to determine the prevalence/frequency of chicken coccidiosis in different poultry farm at Tangail, sadar upazila.

### Materials and Methods

#### 3.1 Selection of study Area

The study was performed at different poultry farms in Tangail sadar upazila, Tangail.

#### 3.2 Duration of study

The study was conducted from 18<sup>th</sup> March 2013 to 31<sup>st</sup> August 2013.

#### 3.3 Methods of sample collection

During the study period live bird, dead birds and faeces were collected for disease diagnosis from different poultry farm in Tangail sadar upazila.

#### 3.4 Case definition

Coccidiosis is an important protozoan disease, which is clinical characterized by bloody diarrhea, reduce body weight, poor feed conversion, high mortality and microscopically by presence of oocysts in the feces and tissue scraping of intestinal mucosa. The disease also diagnosis by post mortem examination based on presence of hemorrhage (in caeca or small intestine) with clotted blood; caeca may be enlarged or distended with thickened mucosa covered with white plaques.

#### 3.5 Clinical symptoms

Chicks showed bloody feces which tangled the feather around the vent, loose feces, and cessation of feeding, dullness, and rough feather, decreased tendency to eat and drink during the infection period. In addition of trembling, depression and dehydration were also marked.

### Results and Discussion

The present study was conducted large number of diseased birds responsible for morbidity and mortality of poultry at different poultry farm. The different diseases of poultry were found in my study period. Among those diseases coccidiosis was found 13.97% (Table 1).

**Table 1.** Frequency of coccidiosis and other diseases at different poultry farm in Tangail sadar upazila

Name of diseases	No. of birds	Percentage
Coccidiosis	228	13.97%
Colibacillosis	207	12.68%
Mycoplasmosis	285	17.46%
IBD	275	16.85%
ND	185	11.34%
Brooder pneumonia	290	17.76%
Salmonellosis	162	9.92%
Total	1632	100%

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In the study area, overall 1632 birds were examined for postmortem lesion, of which 702 were broilers and 930 layers. The proportional representation of coccidiosis both in broiler and layer shown in the Table 2.

#### 4.1 Frequency of coccidiosis in broiler and layer in Tangail Sadar Upazila

A total no. of 1632 chickens were examined to identified the coccidiosis in Tangail sadar upazila under Tangail district of which 20.94% were broiler chickens and 24.62% of layer type chickens (Table 2). The layer birds were more prone to coccidiosis than broiler. Similar observation was found by Kohler, (2000) where he stated that layer birds are more susceptible to coccidiosis, when reared on floor (litter) than broiler. Coccidia affection found more where litter management system poor.

**Table 2.** Frequency of coccidiosis in broiler and layer

Type of poultry	Total No. of chickens	Coccidiosis affected chickens	Percentage (%) of affected chicken
Broiler	702	147	20.94
Layer	930	229	24.62
Total	1632	376	

#### 4.2 Frequency of Coccidiosis at different unions under Tangail sadar upazila

The Frequency of coccidiosis in different unions at Tangail sadar upazila was shown in the table 3. The frequencies of coccidiosis were 5.26%, 6.31%, 1.34%, 3.61% 0.91%, and 5.57% at Porabari, Salompur, Hogra, Dannya, Katuli, Beguntal unions respectively. The highest affection was found in Salompur union (6.31%) and lowest was (0.91%) in Katuli union Table 3.

**Table 3.** Frequency of coccidiosis at different unions under Tangail sadar upazila

Name of the union	Total No. of chickens	No. of coccidiosis affected birds	Percentage (%)
Porabari	360	86	5.26
Salompur	420	103	6.31
Hogra	82	20	1.34
Dannya	220	59	3.61
Katuli	130	15	0.91
Beguntal	420	91	5.57

#### 4.3 Distribution of coccidiosis in broiler based on age

The Frequency of coccidiosis in broiler is presented in the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and rest of the weeks were 0.71%, 4.84%, 3.56%, 2.99%, and 2.84% respectively. But, in the 3<sup>rd</sup> weeks the frequency reached its peak point compared to other. So, the 3 weeks ages of broiler were susceptible to coccidiosis than other ages. The study was similar with earlier report of Krassner (1993) who stated that young birds more susceptible to coccidiosis than adult, because adult birds become immune against coccidiosis, due to repeated exposure of oocyst shown in the Table 4.

**Table 4.** Distribution of coccidiosis in broiler based on age

Age (week/weeks)	No. of cases	Percentage (%)
First	5	0.71
Second	34	4.84
Third	42	5.98
Fourth	25	3.56
Fifth	21	2.99
Rest of the weeks	20	2.84
Total of cases	149	

#### 4.4 Distribution of Coccidiosis in layer based on age

The data (table 5) had shown the frequency of coccidiosis infection in layer according to age, which were 8.17%, 4.73%, 3.01%, 3.44%, 2.47%, and 2.90% respectively. But the frequency at 1-10 weeks of age was highest than rest of the weeks (8.17%). Hossain (1992) and Moslehuddin *et al.* (1993) reported that birds of 3-6 weeks of age often affected with coccidiosis, but older birds may also be infected, if immunity becomes decrease. Dumpy litter produces media for coccidian protozoa.

**Table 5.** Distribution of Coccidiosis in layer based on age

Age (weeks)	No. of the cases	Percentage (%)	x-value	Interpretation
0-10	76	8.17		
11-20	44	4.73		
21-30	28	3.01		
31-40	32	3.44	66.74	Significant
41-50	23	2.47		
51-rest of the weeks	27	2.90		

#### Conclusions

Coccidiosis is the disease which reduces the growth and increase the mortality of chicken resulting farmer faces huge economic losses. In this study shows that types of bird which are more susceptible to coccidiosis, time of affection, Union of Tangail sadar with highest and lowest prevalence. It will be helpful to the farmer for proper management of disease. From this study different type of diseases were diagnosed based on findings of the study, Brooder pneumonia (17.76%) is the most prevalent disease, coccidiosis (13.97%), colibacillosis (12.68%), mycoplasmosis/CRD (17.46%), infectious bursal disease (16.85%), Newcastle disease (11.34%) and salmonellosis (9.92%) in poultry. The proper litter management system reduces the coccidian affection in chicken. So emphasis should be taken to prevent diseases for development of profitable poultry farms.

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