

PREVALENCE OF INFECTIOUS DISEASES OF BROILER CHICKENS IN GAZIPUR DISTRICT

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ABSTRACT

The study was conducted to determine the occurrence of infectious diseases in broiler chickens at kapasia in Gazipur district during the period from 16th October to 16th December 2008. Detection was made on the basis of history, clinical findings and post-mortem lesions. A total of 199 broiler chickens were examined during the study where Colibacillosis 104 (52.26%), Mycoplasmosis 25 (12.56%), Salmonellosis 02 (1.01%), Omphalitis 23 (11.56%), Coccidiosis 09 (4.52%), Gumboro 22 (11.06%), Mycotoxicosis 11 (5.53%) and mixed infection of Gumboro & Coccidiosis 03 (1.51%) were recorded. In the conclusion it has been remarked that Colibacillosis is a major problem for broiler production and hence poultry farmers can not earn their profit perfectly due to adverse effect of those diseases. Further laboratory examination is needed to confirm the identified diseases.

Key words: Clinical findings, necropsy findings, broiler chickens

INTRODUCTION

Poultry industry is an emerging agribusiness starting practically during eighties in Bangladesh. But mortality of chickens due to various infectious and non-infectious diseases is a major constrains for profitable poultry production. Farmers face a wide range of poultry diseases, which reduce the optimal production of flock. Ali (1994) reported about 30% mortality of chickens in Bangladesh every year due to outbreaks of several diseases. Diseases in broiler significantly affect the productivity and health status (Chanie *et al.*, 2009). Rahman *et al.*, (2007) reported Salmonellosis 50.90%, Omphalitis 28.42%, Colibacillosis 13.36%, Mycoplasmosis 2.55%, Necrotic enteritis 1.88% and Infectious coryza 0.56% in chickens. Infectious bursal disease is an important viral disease which causing 10-40% mortality in broiler flock (Sah *et al.*, 1995). Coccidiosis is one of the most important diseases of poultry, it results in a great economic loss all over the world (Braunius, 1980). Nematollahi *et al.* (2009) reported overall prevalence of coccidiosis in broiler chickens 55.96%. Most of these disease cripples the immune system of the affected birds that in turns result vaccination failure and make them highly susceptible to other infectious diseases. As such poultry industry of this country will be logging behind unless the cases of such diseases mortality are known and requisite control measures of different fatal diseases are efficiently achieved. Considering the above facts the present study was undertaken to study the occurrence of the infections diseases in broiler chicken.

MATERIALS AND METHODS

The study was conducted at UVH (Upazila Veterinary Hospital), Kapasia, Gazipur during the period from 16th October 2008 to 16th December 2008. A total 199 sick and dead broiler chickens were examined during the study. The clinical findings and the farmer's complaints were also considered.

Diagnosis of diseases

The bird was examined systematically and recorded the postmortem changes during necropsy (Charlton, 2000).

1. Colibacillosis

The clinical signs showed that sick birds were dullness, depression, reduced intake of food and water, huddling at the corner of the shed, loss of body weight, brown color droppings etc. Post-mortem examination revealed pericarditis, petechial haemorrhages and formation of the fibrinous layer on the heart, air sac infection, enteritis, dilation of the last part of the intestine. These lesions are similar to Gross (1988) and North and Bell (1990) pathological investigation.

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2. Salmonellosis

The affected birds exhibited somnolence, ruffled feather, whitish to greenish diarrhoea, chalky white excreta adhered with the vent & anemic comb and wattle. Postmortem examination revealed enlarged and necrotic foci on liver, greenish to bronze color liver.

3. Infectious bursal disease

The recorded clinical signs were soiled vent, feathers, whitish or watery diarrhea, anorexia, trembling, severe prostration and death. Post-mortem lesion includes pint point haemorrhage in the thigh and breast muscles, enlarged and necrosed bursa of fabricius, yellowish gelatinous membrane found over the swollen bursa, hemorrhage on the bursa. Mucous containing drooping found in the ascending part of small intestine.

4. Mycoplasmosis

The clinical findings showed that oculo-nasal discharge, gasping on mouth, lower feed consumption etc. Post-mortem examination showed that catarrhal exudates in nasal and para nasal passages, trachea, bronchi, cloudy air sacs and congestion of the lungs.

5. Omphalitis

Birds were found dead without showing any clinical signs & some were lethargic and depressed with poor growth performance. The necropsy examination revealed that considerable thickened unabsorbed yolk in all dead chicks, abdominal contents cloudy and malodorous, yolk appeared highly inflamed, thickened and edematous. The blood vessels around the yolk were highly congested. These observations are similar to Harry (1957) and Kamal (1989).

6. Coccidiosis

Clinical findings of coccidiosis were ruffled feather, drowsiness, bloody diarrhea, anemia & high mortality. Post mortem examination showed that hemorrhage on caecal tonsil, loss of tonacity of two caeca, clotted blood engorged in the cecum, white foci present in the mucous membrane of intestine, catarrhal enteritis. These lesions are more similar to Rahman (1992) investigation.

8. Mycotoxicosis

The post-mortem lesions of the dead chickens showed blackish or yellowish discoloration of liver, friable (fragile liver), hepatomegaly. The gallbladder is enlarged and filled with bile. In case of mild infection blackish discoloration of the intestine was observed. These observations support to the report Ortatatli and Oquez (2001).

RESULTS AND DISCUSSION

Analysis of the data revealed that 199 broiler chickens were examined during the study where Colibacillosis 104 (52.26%), Mycoplasmosis 25 (12.56%), Salmonellosis 02 (1.01%), Omphalitis 23 (11.56%), Coccidiosis 09 (4.52%), Gumboro 22 (11.06%), Mycotoxicosis 11 (5.53%) and Gumboro and Coccidiosis 03 (1.51%) were recorded.

1. Colibacillosis

Colibacillosis was recorded 52.26%. Khan *et al.* (1998) reported 12% which is lower than the performed study. Among the infectious diseases colibacillosis was found highest prevalence. Pandey *et al.* (1998) conducted a systemic study on *Escherichia coli* outbreak prevalence in which November to March recorded much higher number of outbreaks due to hot, humid and rainy season, which support the present study.

2. Salmonellosis

Salmonellosis was recorded 1.01% in broiler birds with necrotic foci on liver. Chisti *et al.* (1985) reported that bronge discoloration of liver 75%, & necrotic foci on liver 11%, which support the present necropsy findings. The prevalence of salmonella infection was higher in summer season than in winter (Sarker, 2004). It might be due to the influence of hot weather and sudden rainfall. The present study was done in winter month and supported by Sarker (2004).

3. Infectious bursal disease

Infections bursal disease was recorded in 11.06% broiler birds. Pathological investigation and prevalence of the disease are similar to Saha and Majumder (1997) and Sil *et al.* (2002). Prevalence of Gumboro disease also reported by Anjum (1990) and Kim *et al.* (1996) as 3.1% and 27.3%, respectively.

Table1. Prevalence of infectious diseases in broiler chickens

Sl. No.	Disease	No. of broiler chickens	Percentage (%)
01	Colibacillosis	104	52.26
02	Mycoplasmosis	25	12.56
03	Salmonellosis	02	1.01
04	Omphalitis	23	11.56
05	Coccidiosis	09	4.52
06	Gumboro	22	11.06
07	Mycotoxicosis	11	5.53
08	Gumboro and Coccidiosis	03	1.51



Fig. 1. A typical lesion of acute Colibacillosis containing dilatation of the colon.



Fig. 2. A typical lesion of Salmonellosis (focal necrosis and glistening of surface of the liver).



Fig. 3. A typical lesion of Gumboro disease (pin point hemorrhage found in the mucous membrane of swollen bursa).



Fig. 4. A typical lesion of Mycoplasmosis (congested lung).



Fig. 5. A typical gross finding of Omphalitis due to colibacillosis.



Fig. 6. A typical lesion of Coccidiosis (Cecum engorged with clotted blood).



Fig. 7. A typical lesion of acute Mycotoxicosis (blackish discoloration and fragile liver).



Fig. 8. A typical lesion of mild Mycotoxicosis (blackish discoloration of the intestine)

4. Mycoplasmosis

Mycoplasmosis was recorded 12.56% in broiler birds. Anjum (1990) reported 5.8% which is lower than recorded study. Clinical and pathological lesions are supported by Bajwa *et al.* (1992). The factors which contribute the mycoplasma infection are poor ventilation, moist litter and no restriction on movement of technical personnel visitors and such other persons as well as biosecurity measures (Dulali, 2003).

5. Omphalitis

Omphalitis was recorded 11.56%. Bhattacharjee *et al.* (1996) revealed incidence of Omphalitis 8.9% in chicks which is lower than the present study. Infection might be due to fecal contamination of eggs, which is a most important source of yolk sac infection and other sources might be ovarian infection or salpingitis.

7. Coccidiosis

Coccidiosis was recorded 4.52% in broiler chickens which is lower than the Saleque *et al.* (2003) who reported 7.2% in layer birds. Some factors like wet litter improper cleaning of poultry houses and disinfection before introducing day old chicks increase the susceptibility of coccidiosis in poultry farm (Sharif, 2002).

8. Mycotoxicosis

Mycotoxicosis was recorded 5.53%, which is higher than Yunus *et al.* (2009) who reported incidence of Mycotoxicosis in poultry 3.9%. The disease might be due to poor management of litter, increase moisture content in feed and lack of biosecurity measures.

9. Gumboro and Coccidiosis mixed infection

The present study revealed that 1.51% broiler chickens affected with Gumboro and Coccidiosis mixed infection.

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