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A Study on the Occurrence of Poultry Diseases in Sylhet Region of Bangladesh

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Abstract: A pathological investigation on the occurrence of poultry diseases in Sylhet region of Bangladesh was conducted during the period from November 2001 to October 2002. A total of 1352 sample of either dead or sick birds were brought from different Upazillas of Sylhet region. Diagnosis of different disease conditions was made on the basis of the history, age of birds, clinical signs, gross and microscopic lesions. The diagnosed diseases included Infectious Bursal disease (IBD) (24.26%), Newcastle Disease (ND) (6.73%), Infectious Bronchitis (0.29%), Omphalitis (2.81%), Fowl Cholera (0.44%), Salmonellosis (6.73%), Colibacillosis (5.17%), Necrotic enteritis (0.44%), Aspergillosis (17.53%), Infectious Coryza (0.37%), Chronic respiratory disease (CRD)/Mycoplasmosis (5.32%), Coccidiosis (9.46%) and deficiency disorders/stress condition (1.03%). In general, the highest number of cases were recorded in the age group of 8-21 days (42.60%), followed by 22-35 days age group (26.62%), 0-7 days age group (26.10%), 36-60 days age group (1.03%) and over 60 days age group (3.62%) of Poultry. Distribution and proportionate incidence of poultry disease of Bangladesh reveals that the poultry diseases occur mostly in rainy season (56.36%), followed by summer (28.11%) and the least in winter season (15.53%).

Key words: Poultry diseases, control of diseases, farm management

Introduction

Poultry industries play an important role in poverty alleviation and economic development of Bangladesh. Poultry meat contributes approximately 37% of total animal protein supplied in the country (Rahman and Rahman, 1998). Government of the People's Republic of Bangladesh has recently given priority in potential poultry sector. There are 89.48 million poultry population in Bangladesh (Samad, 1996). Sylhet is the northeast part of Bangladesh with different geo-climatic condition from other parts and recently declared as Division. There is less number of poultry farms in Sylhet comparing with other region of Bangladesh. Now-a-days farmers are getting steps to set poultry farms in Sylhet region as industry. But Poultry diseases are the major constraints for developing the poultry industry. The prevalence of diseases in a particular area depends on various factors like geo-climatic condition, management practices, immunization status, social awareness etc. To establish commercial poultry farm, the incidence of poultry diseases of the area should be considered for prevention and control of the diseases. This paper represents the prevalence of poultry diseases in Sylhet region of Bangladesh.

Materials and Methods

A total of 1352 dead/sick birds of different poultry farms of different Upazillas at Sylhet region were used for this study. These birds were brought to the Field Disease Investigation Laboratory (FDIL), Sylhet during the period from November 2001 to October 2002. To study the seasonal variations in the incidence of the diseases, the whole year was divided into conventional three seasons, namely winter (November-February), summer (March-June) and Rainy (July-October). According to age the birds were grouped as 0-7, 8-21, 22-35, 36-60 and over 60 days of age. The diagnosis of different diseases was based on the history of the flock, age of affected birds, clinical signs, postmortem lesions, gross and microscopic examinations and isolation and identification of causal agents.

Results

Occurrence of Poultry Diseases in Sylhet Region of Bangladesh with age-wise and season-wise distribution and proportionate incidence were shown in Table 1 and Table 2, respectively. In general, the highest number of cases were recorded in the age group of 8-21 days (42.60%), followed by 22-35 days age group (26.62%), 0-7 days age group (26.10%), 36-60 days age group (1.03%) and > 60 days age group (3.62%) of Poultry. Among the viral diseases, IBD and ND constituted 24.26 and 6.73% of total mortality, respectively. Outbreaks of both IBD and ND occurred mostly in the 22-35 days age group, and then 8-21 days age group followed by 0-7 days age group. A part from viral infection among the other diseases, it was observed that Aspergillosis (17.53%) Coccidiosis (9.46%), Salmonellosis (6.73%), CRD/Mycoplasmosis (5.32%) and Colibacillosis (5.17%) were the major causes of poultry diseases. Other common diseases were Omphalitis (2.81%), deficiency disorders/stress conditions (1.03%), fowl cholera (0.44%), Necrotic enteritis (0.44%), infectious Coryza (0.37%) and infectious bronchitis (0.29%). Mixed infections with two or more diseases such as IBD + ND, Aspergillosis + Salmonellosis, Aspergillosis + *E. Coli*, IBD + Coccidiosis, IBD + ND + Coccidiosis and Salmonellosis + Mycoplasmosis were the causes of 7.69, 2.88, 2.73, 2.51, 2.88 and 0.66 of total mortality, respectively.

Table 1: Poultry diseases occurring in Sylhet region :age-wise distribution and proportionate incidence

Disease	Age of birds					Number of cases	Proportionate incidence (%) encountered
	0-7 (days)	8-21 (days)	22-35 (days)	36-60 (days)	<60 (days)		
Infectious Bursal Disease (IBD)	14 (1.04%)	153 (11.32%)	154 (11.39%)	07 (0.52%)	00 (0%)	328	24.26
Newcastle Disease (ND)	03 (0.22%)	25 (1.85%)	47 (3.48%)	01 (0.07%)	15 (1.11%)	91	6.73
Infectious Bronchitis	00 (0%)	00 (0%)	04 (0.30%)	00 (0%)	00 (0%)	04	0.294
Omphalitis	38 (2.81%)	00 (0%)	00 (0%)	00 (0%)	00 (0%)	38	2.815
Fowl Cholera	06 (0.44%)	00 (0%)	00 (0%)	00 (0%)	00 (0%)	06	0.446
Salmonellosis	26 (1.92%)	48 (3.55%)	09 (0.67%)	02 (0.18%)	06 (0.44%)	91	6.73
Colibacillosis	13 (0.96%)	33 (2.44%)	22 (1.63%)	00 (0%)	02 (0.15%)	70	5.17
Necrotic enteritis	06 (0.44%)	00 (0%)	00 (0%)	00 (0%)	00 (0%)	06	0.449
Aspergillosis	185 (13.68%)	52 (3.85%)	00 (0%)	00 (0%)	00 (0%)	237	17.5310
Infectious Coryza	00 (0%)	04 (0.30%)	00 (0%)	00 (0%)	01 (0.07%)	05	0.37
Chronic Respiratory Disease (CRD)/Mycoplasmosis	09 (0.67%)	53 (3.92%)	10 (0.74%)	00 (0%)	00 (0%)	72	5.3212
Coccidiosis	05 (0.37%)	31 (2.44%)	90 (6.67%)	00 (0%)	00 (0%)	128	9.4613
IBD + Coccidiosis	00 (0%)	21 (1.55%)	11 (0.81%)	00 (0%)	02 (0.15%)	34	2.5114
IBD + ND + Coccidiosis	00 (0%)	39 (2.88%)	00 (0%)	00 (0%)	00 (0%)	39	2.8815
Deficiency disorders/stress	07 (0.52%)	07 (0.52%)	00 (0%)	00 (0%)	00 (0%)	14	1.0316
Aspergillosis + Salmonellosis	17 (1.26%)	22 (1.63%)	00 (0%)	00 (0%)	00 (0%)	39	2.8817
Salmonella + *E.Coli*	18 (1.33%)	16 (1.18%)	00 (0%)	00 (0%)	03 (0.22%)	37	2.7318
Salmonella + Mycoplasmosis	06 (0.44%)	03 (0.22%)	00 (0%)	00 (0%)	00 (0%)	09	0.66
IBD + ND	00 (0%)	67 (4.96%)	13 (0.96%)	04 (0.30%)	20 (1.48%)	104	7.69
Total	353 (26.11%)	576 (42.60%)	360 (26.63%)	14 (1.04%)	49 (3.62%)	1352	

*Parenthesis() indicates Proportionate incidence

In the present investigation, the result of season wise distribution and proportionate incidence of poultry disease of Bangladesh revealed that the poultry diseases occurred mostly in rainy season (56.36%), followed by summer (28.11%) and the least in winter season (15.53%).

Discussion

The present study revealed 24.26% of IBD in Sylhet region that was higher than those of Bhattacharjee *et al.* (1996); Islam *et al.* (1998); Talha *et al.* (2001), reported 10.99, 16.0 and 19.16% cases of IBD on Dhaka and Mymensingh, respectively. This variation may be due to geographic variation. Most of the flocks, where IBD were recorded were vaccinated. Findings indicated that in most cases vaccination could not protect the birds. According to Godwin (2001), the factors causing vaccine breaks are either i) vaccine type, storage and handing or ii) condition of the bird including the level of maternal antibody or iii) administration of vaccine. Further research is to be conducted to find out the exact causes of vaccination failure and to identify a potent vaccine to protect the birds of Bangladesh from this devastating malady.

In the present investigation, 6.73% of ND positive cases were found but a higher 10.24 and 17.20% incidence of the disease were reported by Talha *et al.* (2001); Islam *et al.* (1998), respectively. The present findings would indicate that the reemergence of ND in commercial flocks is still a threat to the poultry industry in spite of availability use of ND vaccines. Its needs to be investigated if the reemergence of ND is due to vaccination failure or any other factor. In case of bacterial diseases, Talha *et al*. (2001) reported 13.12% of

Table 2: Poultry diseases occurring in Sylhet region: season-wise distribution and proportionate incidence

Diseases	Rainy	Winter	Summer	Number of cases encountered
Infectious Bursal Disease (IBD)	211 (15.60%)	45 (3.33%)	72 (5.33%)	328 (24.26)
Newcastle Disease(ND)	32 (2.36%)	12 (0.88%)	47 (3.48%)	91 (6.73)
Infectious Bronchitis	-	4 (0.29%)	-	04 (0.29)
Omphalitis	8 (0.59%)	-	30 (2.22%)	38 (2.81)
Fowl Cholera	6 (0.44%)	-	-	06 (0.44)
Salmonellosis	45 (3.33%)	24 (1.78%)	22 (1.63%)	91 (6.73)
Colibacillosis	25 (1.85%)	12 (0.88%)	33 (2.44%)	70 (0.51)
Necrotic enteritis	6 (0.44%)	-	-	06 (0.44)
Aspergillosis	158 (11.68%)	7 (0.52%)	72 (5.33%)	237 (17.53)
Infectious Coryza	4 (0.29%)	1 (0.07%)	-	05 (0.37)
Chronic Respiratory Disease(CRD)/Mycoplasmosis	43 (3.18%)	21 (1.55%)	8 (0.59%)	72 (5.32)
Coccidiosis	86 (6.36%)	23 (1.70%)	19 (1.41%)	128 (9.46)
IBD+ Coccidiosis	15 (1.11%)	6 (0.44%)	13 (0.96%)	34 (2.51)
IBD+ND+Coccidiosis	10 (1.74%)	10 (0.74%)	19 (1.41%)	39 (2.88)
Deficiency disorders/stress	1 (0.07%)	6 (0.44%)	7 (0.52%)	14 (1.03)
Aspergillosis + Salmonellosis	20 (1.48%)	-	19 (1.41%)	39 (2.88)
Salmonella +*E.Coli*	31 (2.29%)	2 (0.15%)	4 (0.29%)	37 (2.73)
Salmonella + Mycoplasmosis	9 (0.66%)	-	-	09 (0.66)
IBD+ND	52 (3.85%)	37 (2.74%)	15 (1.11%)	104 (7.69)
Total	762 (56.36%)	210 (15.53%)	380 (28.11%)	1352 (100%)

Colibacillosis and 11.55% of Mycoplasmosis/CRD in Mymensingh region which are higher than the present findings 6.73 and 5.32% respectively; but in case of Colibacillosis the findings are similar to that (5.51%). The results indicated that the decrease of Colibacillosis and Mycoplasmosis might be due to better management of the farm and mass dosing of antibiotics.

In the present study, 17.53% of cases of Aspergillosis was reported, but Talha *et al.* (2001) reported 4.20% of positive cases in Mymensingh region. This variation may be due to the cold climatic condition of the Sylhet region.

In the present study, Coccidiosis constituted 9.46% of the total cases which is higher than the study of Talha *et al*. (2001), but correlates with the result of Kutubuddin, (1973); Sarker (1976); Kamal (1989).

In conclusion, it may be mentioned that chicks aged between 8-21 days are most vulnerable to various diseases, and the most prevalent diseases like IBD, ND, Aspergillosis, coccidiosis, Salmonellosis and Mycoplasmosis demand immediate attention for prevention and control.

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