

PREVALENCE OF POULTRY DISEASES AT HIGH ALTITUDES OF DISTRICT POONCH AZAD JAMMU & KASHMIR

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ABSTRACT: Present study investigates prevalence of diseases, important causes of mortality in Broiler and Layer flocks and their interaction with high altitudes as influenced by different climatic conditions. The basis of data is post mortem examination of the birds submitted to District Diagnostic Laboratory, Department of Animal Husbandry during the period from 2008 to 2011. The total record was 28694 cases, 21896 broilers and 6825 layers. Diagnosis was based on history, clinical signs and post mortem examination. On the basis of altitude District was divided into two categories, below 4000 and above 4000 feet high. Over all Infectious Bursal Disease (IBD) was found most prevalent (29.37%) in broilers followed by Colibacillosis 18.61%, Coccidiosis 17.38% and Chronic Respiratory Disease (CRD) 17.27%, while Coryza 33.75% was most prevalent disease in layers followed by ND 22.12%, CRD 16.11% Coccidiosis 12.48% and Colibacillosis 11.36%. On the basis of altitude, the occurrence of various diseases were IBD 29.22%, Colibacillosis 18.53%, CRD 17.89% and Coccidiosis 17.00% above 4000 feet height in broilers, Coryza 43.92%, CRD 21.91% and ND 17.26% in layers while IBD 32.01%, Colibacillosis 18.78%, Coccidiosis 18.28% and CRD 15.82% in broilers and ND 28.58%, Coccidiosis 20.83%, Coryza 20.25% and Colibacillosis 16.30% in layers below 4000 feet were found. However, rests of the diseases diagnosed during the period were Enteritis, Omphalitis and Hydropericardium.

INTRODUCTION

Azad Jammu & Kashmir is located at the foothill of Himalayas, north east of Pakistan which lies between longitude 730–750 and latitude 330–360 hemisphere. The topography of the area is mainly hilly and mountainous with valleys and stretches of plains. The climate is sub-tropical highland type with an average yearly rainfall of 1300 mm. Temperature ranges -2.6 to 45.2°C. The elevation ranges from 360 meters in the South to 6325 meters in the North (Anonymous, 2009). District Poonch is located in the Northern part of the state and comprises of four Tehsils, Abbaspur, Hajira, Rawalakot and Thorar. Poultry farming is an emerging business introduced in early nineties in the District. There are 213 poultry farms registered with Animal Husbandry Department of Azad Jammu and Kashmir (AJK), capacity ranging from 1000 to 4000 rearing broilers and layers in the district.

Infectious diseases are one of the main factors constraining the poultry sector. In Pakistan, poultry industry is facing various diseases such as Newcastle disease, Infectious bronchitis, Infectious bursal disease, Egg drop syndrome, Hydropericardium syndrome and Avian influenza (Numan *et al.*, 2005). 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 (Ahmad *et al.*, 2009). These diseases are causing high economical losses in terms of high mortality, morbidity, stress, decreased egg production and hatchability all over the world, including Pakistan (Alexander, 2000).

Commercial broilers constituted 79.5% cases, diagnosis mostly based on clinical signs, and postmortem examination. Coccidiosis is the most prevalent disease of broilers followed by Coryza, E. coli, Chronic Respiratory Disease (CRD), Infectious Bursal Disease (IBD), Hydropericardium Syndrome (HPS), and New Castle Disease (ND) also described by Yunus *et al.* (2008). Environmental factors may have profound effects on occurrence of poultry diseases and this important relationship has never been explored in Pakistan (Yunus *et al.*, 2009). Previous surveys on poultry diseases have reported prevalence (Siddique *et al.*, 1987) and their relationship with age (Ahmad and Irfan, 1981) and weather (Anjum, 1990). In Pakistan, surveillance records of poultry diseases are mostly restricted to limited study areas in the vicinity of big cities of Punjab.

This study, therefore, was planned as a preliminary attempt to investigate the relationship between different diseases at hilly areas of high altitudes as affected by different climatic conditions.

MATERIALS AND METHODS

Present study investigated on prevalence of diseases, important causes of mortality in broiler and layer flocks and their interaction with high altitudes as influenced by different climatic conditions. The basis of data was postmortem examination of the birds submitted to the District Diagnostic Laboratory, Department of Animal Husbandry, government of AJK to probe causes of mortality during the period from 2008 to 2011. The total record was of 28694 cases, among those 21869 broilers and 6825 layers. Diagnosis was based on history, clinical signs, and postmortem examination. On the basis of altitude the District was divided into two categories below 4000 feet and above 4000 feet height.

District Poonch was divided according to tehsil wise forms, location and height that is Tehsil Hajira, Abbaspur and some farms from Thorar were included in category below 4000 feet height, while Tehsil Rawalakot and some farms from Tehsil Thorar were included in category above 4000 feet height. Broilers and layers constituted 76.21% and 23.79% population respectively. Poultry farms having capacity not less than 1000 for broilers and 500 birds for layer were included in the study. The farms included were given same types of feed and similar management conditions.

The birds included in the present study were of different age groups and breeds. Record of vaccination was checked in each case. Vaccination against New Castle disease, Infectious Bursal Disease, Hydropericardium, and Infectious Bronchitis was carried out in all flocks.

RESULTS AND DISCUSSION

On overall basis (table 1) IBD 29.22% was found most prevalent disease in broilers followed by Colibacillosis 18.61%, Coccidiosis 17.38%, CRD 17.27%, Enteritis 8.76%, Coryza 2.18%, ND 1.58%, Hydropericardium 1.36% and Omphalitis 1.16%. In layers Coryza 33.75% was most prevalent. Other diseases were ND 22.12%, CRD 16.11%, Coccidiosis 12.48%, Colibacillosis 11.36%, IBD 1.34%, Enteritis 0.95% and Omphalitis 0.77%. These results are not in agreement with Yunus *et al.*, (2008), Ahmad *et al* (2009) and Mustafa and Ali (2005), this may be due to different climatic conditions, management practices and flock size. IBD is more prevalent in broilers due to poor vaccination attempts as the most of the farmers were not aware of the importance of vaccines in disease control. Coryza in layer farming was found serious issue as compared to broilers the reason of which is seasonal farming of broilers as most of the farmers are not rearing broilers in winter months of December, January and February. ND was found another cause of mortality in layers because of the

seasonal outbreaks of the disease in winter. Colibacillosis and Coccidiosis were the frequently occurring diseases of broilers and layers which indicate poor management conditions.

Prevalence of diseases at high altitudes above 4000 feet height (Table 2) revealed no difference in ranking of broiler diseases as IBD was the most frequently prevalent but difference was found in case of layers. Coryza (43.92%) was the most frequent cause of mortality in broilers followed by CRD (21.91%) and ND (17.26%). IBD was found one of the least affecting diseases of layers at high altitudes. This huge difference in prevalence of diseases was due to severe climate of high altitudes as Coryza, CRD and ND are the diseases affected by chilling weather conditions of the cold climates. Broilers were not affected due to seasonal farming as compared to layers being reared under better management conditions. Respiratory diseases were found less prevalent below 4000 feet (table 3) in broilers even in winter farming, indicating that respiratory disease outbreak is high at high altitude.

Table 1. Overall Prevalence of Diseases in Broilers and Layers at district Poonch of Azad Jammu and Kashmir, Pakistan.

Disease	Broilers		Layers	
	No. of PM	%	No. of PM	%
IBD	6424	29.37	92	1.34
Colibacillosis	4070	18.61	776	11.36
Coccidiosis	3803	17.38	852	12.48
CRD	3778	17.27	1100	16.11
Enteritis	1916	8.76	65	0.95
Coryza	478	2.18	2304	33.75
ND	347	1.58	1510	22.12
Hydropericardium	298	1.36	00	00
Omphalitis	256	1.16	53	0.77
Miscellaneous	499	2.28	73	1.06
Total	21869	6825		

Table 2. Prevalence of Diseases of Poultry above 4000 feet height at district Poonch of Azad Jammu and Kashmir, Pakistan.

Disease	Broilers		Layers	
	No. of PM	%	No. of PM	%
IBD	4478	29.22	33	0.84
Colibacillosis	2840	18.53	298	7.65
Coccidiosis	2606	17.00	241	6.19
CRD	2742	17.89	853	21.91
Enteritis	1355	8.84	28	0.71
Coryza	416	2.71	1710	43.92
ND	284	1.85	672	17.26
Hydropericardium	171	1.11	00	00
Omphalitis	140	0.91	11	0.28
Miscellaneous	290	1.89	47	1.20
Total	15322	3893		

Table 3. Prevalence of Diseases of Poultry below 4000 feet height at district Poonch of Azad Jammu and Kashmir, Pakistan.

Disease	Broilers		Layers	
	No. of PM	%	No. of PM	%
IBD	2096	32.01	59	2.01
Colibacillosis	1230	18.78	478	16.30
Coccidiosis	1197	18.28	611	20.83
CRD	1036	15.82	247	8.42
Entritis	561	8.56	37	1.26
Coryza	62	0.94	594	20.25
ND	63	0.96	838	28.58
Hydropericardium	47	0.71	00	00
Omphalitis	56	0.85	42	1.43
Miscellaneous	199	3.03	26	0.88
Total	6547	2932		

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