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Original Research Article

A Study on Mortality Pattern of Poultry in and around Ranchi

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A B S T R A C T

A study was undertaken to ascertain the cause of mortality pattern in poultry birds. The present work was carried out on one year (2017) data of carcases of poultry presented to Department of Veterinary Pathology, Ranchi Veterinary College, Ranchi for post-mortem examination. The major causes of mortality were chilling and coryza (42.41%) followed by enteritis (12.94%), nephrosis (10.48%), yolk sac infection (7.73%), coccidiosis (6.83%), colibacillosis (5.88%), ascardiasis (5.60%), oophoritis (5.43%), egg bound codition (1.90%) and egg peritonitis (0.78%). Age wise incidence of disease revealed that starters were more susceptible to chilling and coryza, yolk sac infection, enteritis, nephrosis, coccidiosis and colibacillosis. Mortality in growers was due to chilling and coryza followed by ascardiasis and enteritis. Incidence of oophoritis, egg bound condition and egg peritonitis found to be highest in adults.

Keywords

Poultry, Mortality pattern, Chilling, yolk sac infection, coccidiosis, Oophoritis

Introduction

Poultry is one of the fastest growing segments in agricultural sector in India today, while production of agricultural crop has been rising at the rate of 1.5 to 2% per annum; over the past 2-3 decades poultry production has been rising @ rate of 8-10% per annum.

This rapid growth of poultry industry to supplement their income with the fast development of poultry industry, the occurrence of diseases has increased many folds which remain the major problem affecting its economy as a results disease play a vital role to better understand the status and pattern of diseases.

High incidence of poultry diseases play a major role in reduction of the productivity of poultry rearing. The main reason for the reluctance of farmers invest in poultry production is not only lack of resources but also risk of uncontrolled diseases (Bessei, 1988).

Mortality records in a poultry farm are of immense importance to know the prevalence of diseases and for adopting preventive and control measures. Information regarding mortality pattern of poultry and the causes under local condition of Jharkhand is inadequate.

Considering the importance of poultry for the livelihood of the Jharkhand people and its role in providing supplementary income to the rural farmers, the study was undertaken to find out the causes and pattern of poultry mortality under agro climatic conditions in Jharkhand. This study was

carried out at the department of veterinary pathology, at Birsa Agricultural University, Kanke, Ranchi.

Materials and Methods

Total 1785 dead poultry birds of different age groups under different categories from January 2017 to December 2017 were presented at the Department of Veterinary Pathology, Ranchi Veterinary College, Kanke, Ranchi-06, Jharkhand. The birds were classified according to age into three groups viz. 0-8 weeks (Starter), 9-18 weeks (Grower) and 19 weeks and above (Adult). This study was carried out in different age group of dead poultry birds received from experimental poultry unit of Ranchi Veterinary College, Government farms and private farms of Ranchi including local farmers.

Necropsy was carried out as per approved procedure (Chauhan and Roy, 2003) Laboratory tests were conducted to confirm specific cause of deaths as and when required (Brar *et al.,* 2004).

Results and Discussion

The causes and mortality pattern of poultry birds are shown in the Table.1. Chilling and coryza syndrome caused highest mortality (42.41%) which was similar to the findings of Jha *et al.,* (2012). Enteritis was observed to be the second major causes of mortality (12.94%) followed by nephrosis (10.48%), yolk sac infection (7.73%), coccidiosis (6.83%), colibacillosis (5.88%), ascardiasis (5.60%), oophoritis (5.43%), egg bound conditions (1.90%) and egg peritonitis (0.78%).

Age wise incidence of disease revealed that starters were more susceptible to chilling and coryza (33.61%), yolk sac infection (7.73%), enteritis (7.62%), nephrosis (4.93%), coccidiosis (4.82%) and colibacillosis (3.25%). Mortality in growers was due to chilling and coryza (7.17%) followed by ascardiasis (3.31%) and enteritis (3.25%). Incidence of oophoritis (5.43%), egg bond conditions (1.90%) and egg peritonitis (0.78%) found to be highest in adults. In this study chilling and coryza (33.61%) was the more prone syndrome to cause mortality in starter which was similar to the findings of Jha *et al.,* (2012).

Higher incidence of yolk sac infection (7.73%) might signify the poor quality of day old chick. Ghodasara *et al.,* (1992) also stated that the yolk sac infection were the major causes of chick mortality in chickens. Khan *et al.,* (2002) also reported that yolk retention and yolk sac infection is considered as an important cause of death in chicken as well as in guinea fowl, duck, turkey, quail and goose. Yolk sac infection of bacterial origin is most important factors which slow down the rate of yolk absorption and may in turn lead to yolk retention. Other factors which may contribute include post hatch starvation, type of initial feed, brooding temperature, prolonged exposure to hatcher environment and size of birds.

This study recorded 12.94% mortality due to enteritis in chickens, out of which 7.63% in starter, 3.25 % in growing and 2.07% in adult chickens which is in conformity with the report of Das *et al.,* (2001) who reported its highest incidence in 4 weeks old birds.

Mortality due to Ascaridia galli infection was recorded in 5.60% in chickens. This helminth parasite was recorded in growing (3.31%), starter (0.56%) and adult (1.74%) birds. Rahman and Samad (2003) reported highest case fatality in growers (43.33%), followed by adult layers (18.52%) reared in litter system.

Table.1 Disease and category wise mortality percentage (%) in poultry birds

	0-8 weeks (Starter)	9-18 weeks (Grower)	>18 weeks (Adult)	Total mortality %
Chilling and coryza	33.61	7.17	1.62	42.41
Enteritis	7.62	3.25	2.07	12.94
Nephrosis	4.93	2.75	2.80	10.48
Yolk sac infection	7.73	0.00	0.00	7.73
Coccidiosis	4.82	1.85	0.17	6.83
Colibacillosis	3.25	0.62	2.02	5.88
Ascardiasis	0.56	3.31	1.74	5.60
Oophoritis	0.00	0.00	5.43	5.43
Egg bound codition	0.00	0.00	1.90	1.90
Egg peritonitis	0.00	0.00	0.78	0.78

Coccidiosis, caused by Eimeria spp. is the only recorded protozoan disease in chickens, which is characterized by blood tinged feces, ruffled feathers, loss of appetite, poor growth and reduced egg production (Karim and Trees, 1990; Mosleuddin *et al.*, 1993; Samad and Chakraborty, 1993). This study recorded 1.85% mortality rate in growers supports the report of Sil *et al.*, (2002) who reported 2.29% mortality among 8 to 20 weeks old cockerels. The reason for decreasing the morbidity and mortality rates caused by coccidiosis could be due to improve hygienic management in cage system and routine use of coccidiostats in their flocks.

Oophoritis (5.43%) was the major cause of death in layer birds. It is an inflammation of the ovaries. It is often seen in combination with salpingitis and may develop in response to infections. Egg bound disorder is a condition in which an egg is lodged in the vagina but cannot be laid. It may be due to inflammation of the oviduct, partial paralysis of the muscles of the oviduct or production of a large egg that is difficult to lay. Young pullets laying an unusually large egg are more prone to the problem. When impaction occurs in the uterus or vagina, egg enclosed by shell membranes may be found in the abdominal cavity. This indicates that eggs continued to form but were refluxed back into the peritoneal cavity. Mortality due to this disorder was recorded as 1.90% in layer chickens. Mortality due to the egg peritonitis was recorded as 0.78% layer chicken.

A study was undertaken to assess the causes of mortality of poultry birds of different age groups. The major causes of mortality in starters birds were chilling and coryza followed by yolk sac infection, enteritis, nephrosis, coccidiosis and colibacillosis. Mortality in growers was due to chilling and coryza followed by ascardiasis and enteritis. Incidence of oophoritis, egg bond condition and egg peritonitis found to be highest in adults.

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