

## STUDIES ON POULTRY MORTALITY WITH SPECIAL REFERENCE TO GASTRO-INTESTINAL TRACT DISORDERS

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### SUMMARY

To study etiopathology with special reference to gastro-intestinal tract disorders, data pertaining to mortality in poultry between January 2004 and December 2008 was collected and was co-related with gastro-intestinal disorders. Analysis of the data revealed that mortality was maximum in adult age group (29.11%) and affections of digestive system accounted for highest mortality (30.88%). The main gastro-intestinal affections were colibacillosis, enteritis, hepatitis, coccidiosis, fatty liver and enlargement of liver.

**Key words:** Mortality, gastro-intestinal tract, poultry

During the last few decades, methods of poultry husbandry have changed considerably due to an emphasis on intensive rearing which has predisposed birds for the occurrence of various infectious diseases. Poultry industry suffers great losses due to these diseases. Among these, the conditions affecting gastro-intestinal tract are quite common and include colibacillosis, salmonellosis, coccidiosis, Ranikhet disease, ascites syndrome, necrotic enteritis and a lot more. These infections lead to heavy chick morbidity, mortality and lowered egg or meat production. Importance of these diseases can be judged from the fact that the incidence of coccidiosis is followed by *E. coli* infections, fowl typhoid, fatty liver syndrome and Ranikhet disease (Suresh *et al.*, 1990). Fowl typhoid is a formidable problem in poultry rearing and is not only of economic concern to the poultry but also of public health importance. Necrotic enteritis is currently a major problem in poultry industry (Van Immerseel *et al.*, 2004, Williams, 2005). The present study was undertaken to explore the role of gastro-intestinal tract disorders in poultry mortality.

In order to determine the incidence of gastro-intestinal disorders in poultry, records pertaining to the post mortem examination of poultry conducted at the department of Veterinary Pathology, College of

Veterinary Sciences, Chaudhary Charan Singh Haryana Agricultural University, Hisar, for the last five years in between January 2004 and December 2008 were examined and tabulated. The information in regard to breed, age, month, cause of death determined on the basis of necropsy findings, was collected. The carcasses of chickens were divided into five groups on the basis of age i.e. Group I (0-1 week), Group II (1-6 weeks), Group III (6-12 weeks), Group IV (12-18 weeks) and Group V (adults). Using this data, mortality rate on the basis of age, season and cause specific was calculated. A total of 6408 cases were analysed. Maximum mortality was recorded during year 2004 (2272) followed by 2006 (1359), 2005 (1071), 2007 (1017) and 2008 (689). The difference in the mortality may be due to the variation in number of birds on the farm or occurrence of some disease outbreaks. Age-wise

**Table 1**  
Age-wise distribution of mortality among poultry

Year	Weeks				Adults
	0-1	1-6	6-12	12-18	
2004	226	418	407	410	811
2005	118	246	168	291	248
2006	32	301	204	362	460
2007	248	376	116	71	206
2008	126	355	17	51	140
Total	750	1696	912	1185	1865
%	11.70	26.47	14.23	18.49	29.11

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**Table 2**  
**Month-wise mortality pattern in poultry for the period 2004-2008**

Month/Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2004	75	49	157	172	362	272	297	324	259	130	114	61
2005	45	40	34	97	96	110	112	118	170	91	102	56
2006	62	48	52	139	189	111	84	139	181	160	151	43
2007	38	37	226	253	141	65	43	52	59	44	25	34
2008	50	5	85	117	94	26	28	38	22	47	20	157
Total	270	179	554	778	882	584	564	671	691	472	412	351
(%)	(4.21)	(2.79)	(8.65)	(12.14)	(13.77)	(9.11)	(8.80)	(10.47)	(10.78)	(7.37)	(6.43)	(5.48)

**Table 3**  
**System-wise mortality pattern in poultry for the period 2004-2008**

System involved	2004	2005	2006	2007	2008	Total (%)
Digestive system	744	265	445	342	183	1979 (30.88)
Respiratory system	252	168	89	123	71	703 (10.97)
Others	679	307	473	376	339	2174 (33.93)
Putrefied	597	331	352	176	96	1552 (24.22)
Total	2272	1071	1359	1017	689	6408

distribution of mortality in poultry indicates that maximum mortality was in adult age group (29.11%) followed by 1-6 weeks (26.47%), 12-18 weeks (18.49%), 6-12 weeks (14.23%) and 0-1 week (11.70%) age group (Table 1). The higher mortality in adult birds may be due to their large number at University Farm.

Month-wise mortality in poultry for the period 2004-2008 reveals that mortality in poultry was higher in May (13.77%) and April (12.14%) months followed by September and August months and minimum in the month of February (2.79%) (Table 2). High mortality during April and May months may be due to summer stress in the affected flock and birds might not be able to adjust in the increased temperature. Secondly, the requisite facilities which must be present in the poultry sheds to provide relief to birds from summer, may be lacking or not being utilized.

System-wise mortality in poultry for the period 2004-2008 reveals that mortality in poultry due to involvement of digestive system was 30.88% (Table 3). Respiratory system accounted for 10.97% mortality and other systems for 33.93% mortality. This may be

due to involvement of large number of organs of gastro-intestinal tract in the pathogenesis of various bacterial diseases. The main gastro-intestinal affections were colibacillosis, enteritis, hepatitis, coccidiosis, fatty liver and enlargement of liver. Fossum *et al.* (2009) also reported colibacillosis and coccidiosis as common cause of poultry mortality. Pneumonia was the main affection of respiratory tract.

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