DISEASES OF POULTRY IN ZARIA, NIGERIA: A TEN YEAR ANALYSIS OF CLINIC RECORDS

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ABSTRACT

A 10-year study of poultry diseases diagnosed at the Avian clinic of Veterinary Teaching Hospital, Ahmadu Bello University, Zaria was conducted. In all 2999 cases were studied. The commonest diseases afflicting poultry were Newcastle disease, 31.2%, Gumboro 12.0%, Ectoparasitism 7.7%, Fowl pox 6.8%, Helminthiasis 6.6% and Coccidiosis 6.1%. Most outbreaks occurred in the months of May and June with the highest incidence in 1989. Fowl pox (FP), infectious bursal disease (IBD) and coccidiosis were more prevalent during the rainy season (May-October) while Newcastle disease (NCD) and Aspergillosis were more prevalent in the dry season (November - April). More cases of chronic respiratory disease (CRD), helminthiasis and salmonellosis were found in poultry over 12 weeks old while gumboro, fowl pox and coccidiosis were found more in birds less than 7 weeks old. It was concluded from this study that viral diseases (NCD, IBD, FP) ectoparasitism and helminthiasis were the most important poultry diseases in Zaria and young birds were more susceptible. The need for an effective poultry health programme is imperative. It is therefore recommended that effective and uniform vaccination schedules should be conducted along with regular deworming and ectoparasite control to enhance poultry production.

Key Words: Disease, Poultry, Zaria.

INTRODUCTION

The poultry population in Nigeria is estimated at 104.3 million comprising 72.4 million chickens, 11.8 million ducks, 4.7 million guinea fowls, 15.2 million pigeons and 0.2 million Turkeys (FDLPCS, 1992). This is said to constitute a major animal protein source in this country. Besides poor feeding, housing and management, disease is one of the most important constraints facing the poultry industry in Nigeria today. Abdu *et al* (1985) reported an increase in the incidence of poultry diseases in Zaria through the years despite vaccination and suggested the need for a detailed study of the epizootiology of poultry diseases in Zaria. Sa'idu *et al* (1994 a,b) reported the possibility of seasonality of these diseases in the indigenous chickens and turkeys.

This study was therefore conducted to determine the current epizootiology of poultry diseases in Zaria with a view to finding the most effective means of control.

MATERIALS AND METHODS

A 10-year study (January, 1986 - December, 1995) of poultry diseases diagnosed and recorded at the Avian clinic of Veterinary Teaching Hospital, Ahmadu Bello University Zaria was conducted. Most of the chickens were brought to the clinic from Samaru and its environs. Diagnoses were based on flock history, clinical signs, necropsy findings and laboratory results. The distribution of cases by disease, season and age were calculated. Mortality caused by each disease was also calculated.

The ages of the chickens were considered in weeks and divided into 4 different age groups:

(i) Birds that were less than 7 weeks old.
(ii) Birds that were 7 weeks to 12 weeks old.
(iii) Birds that were above the age of 12

TABLE 1: MONTHLY DISTRIBUTION OF POULTRY DISEASE IN ZARIA (1986 - 1995)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	(%)
NCD	101	92	83	79	79	70	64	58	61	61	83	104	935	31.2
IBD	24	17	28	33	63	51	27	14	18	12	45	29	361	12.0
FP	6	12	13	15	11	26	36	20	25	12	13	14	203	6.8
PASTURELLOSIS	10	9	9	7	9	6	8	4	12	14	10	9	107	3.6
SALMONELLOSIS	10	13	9	8	8	15	14	21	2	18	15	13	146	4.9
ECTOPA-RASITISM	13	16	11	16	25	31	31	24	13	17	16	18	231	7.7
HELMINTHIASIS	17	18	12	14	17	24	12	13	15	11	23	23	199	6.6
NUTR. DEF.	9	6	6	5	8	13	11	21	8	6	11	13	117	3.9
FOWL TYPHOID	6	4	5	5	1	8	6	4	13	4	2	1	59	2.0
ASPERGILLOSIS	5	4	3	3	4	7	4	3	2	1	4	5	45	1.5
COCCIDIOSIS	10	8	9	9	16	22	27	26	28	13	9	7	184	6.1
OTHERS	40	33	41	37	37	34	34	25	33	36	34	28	412	13.7
TOTAL	**251**	**232**	**229**	**231**	**278**	**307**	**274**	**233**	**230**	**205**	**265**	**264**	**2999**	**100%**

TABLE 2: ANNUAL DISTRIBUTION OF POULTRY DISEASES IN ZARIA (1986 - 1995)

DISEASE	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	TOTAL	(%)
NCD	75	125	68	111	135	101	76	53	102	89	935	31.2
IBD	38	35	38	59	44	33	25	21	44	25	361	12.0
FP	19	33	30	22	24	22	14	14	16	9	203	6.8
PASTEURELLOSIS	7	9	2	10	12	10	14	8	19	16	107	3.6
SALMONELLOSIS	16	22	10	37	16	7	7	14	6	11	146	4.9
ECTOPARASITISM	14	49	44	29	31	31	13	8	7	5	231	7.7
HELMINTHIASIS	19	34	28	26	24	30	12	11	7	8	199	6.6
NUTR. DEF.	3	16	13	13	17	26	10	6	6	7	117	3.9
FT	8	6	10	5	7	4	12	2	1	4	59	2.0
ASPERGILLOSIS	6	2	4	5	6	8	8	1	2	3	45	1.5
COCCIDIOSIS	4	11	11	30	28	20	19	14	21	26	184	6.1
OTHERS	24	39	32	50	46	49	45	35	55	37	412	13.7
TOTAL	**233**	**380**	**290**	**397**	**390**	**341**	**255**	**187**	**286**	**240**	**2999**	**100%**

weeks

(iv) Birds of undetermined ages.

The following seasons were considered:

(i) Dry season (November - April).

(ii) Rainy season (May - October).

RESULTS

In all 2999 cases of poultry diseases were attended to during the period. Most outbreaks occurred in the month of June (Table 1), with the highest incidence in 1989 (Table 2). The commonest diseases afflicting poultry were Newcastle 31.2%, Infectious bursal disease 12.0%, Ectoparasitism 7.7%, Fowl pox 6.8%, Helminthiasis 6.6% and Coccidiosis 6.1%. The highest mortality rate (22.0%) was recorded for Salmonellosis while ectoparasitism had the least mortality rate (6.0%).

The incidence of Newcastle disease (NCD) was highest in the dry season with peaks of outbreaks in December and January (Figure 1), and occurred in chicks less than 7 weeks old (Fig 2). Chronic respiratory disease (CRD) showed the highest incidence in birds over 12 weeks old and was not recorded for birds less than 7 weeks old. IBD, FP and Coccidiosis were diseases that occurred more in young birds less than 7 weeks of age (Figure 2). The highest incidence was recorded during the rainy season for IBD (51.2%), FP (64.0%), Fowl typhoid (FT) (61.0%) and coccidiosis (71.7%) (Figure 1). The less frequently occurring diseases were grouped under others and recorded a proportional morbidity rate of 13.7%.

DISCUSSION

This study showed NCD, IBD, Ectoparasitism, FP, Helminthiasis and coccidiosis to be the most important diseases of poultry in Zaria and environs. It also showed that there is seasonal distribution of these disease conditions, as had been earlier observed (Abdu *et al,* 1985; Saidu *et al,* 1994a,b). The occurrence of most outbreaks in the month of June agrees with that of previous report (Abdu *et al,* 1985). This might likely be due to the warm and humid weather in June which is conducive to the growth and development of infectious agents, vectors and intermediate hosts.

Newcastle disease was found to be more prevalent in December, January and February and in young birds, as was previously reported in local chickens and Turkeys in Zaria by Saidu *et al,* (1994a,b). These months fall within the harmattan period which is extremely cold and windy. It was suggested that the wind velocity and the amount of dust in the air may influence the transmission of the disease and cold stress may worsen the outcome of the disease (Abdu *et al,* 1992).

Infectious bursal disease outbreaks occurred more frequently in the months of May and June (Table 1) and in young birds

G. 1: SEASONAL DISTRIBUTION OF POULTRY DISEASES IN ZARIA, NIGERIA (1986 - 1995)

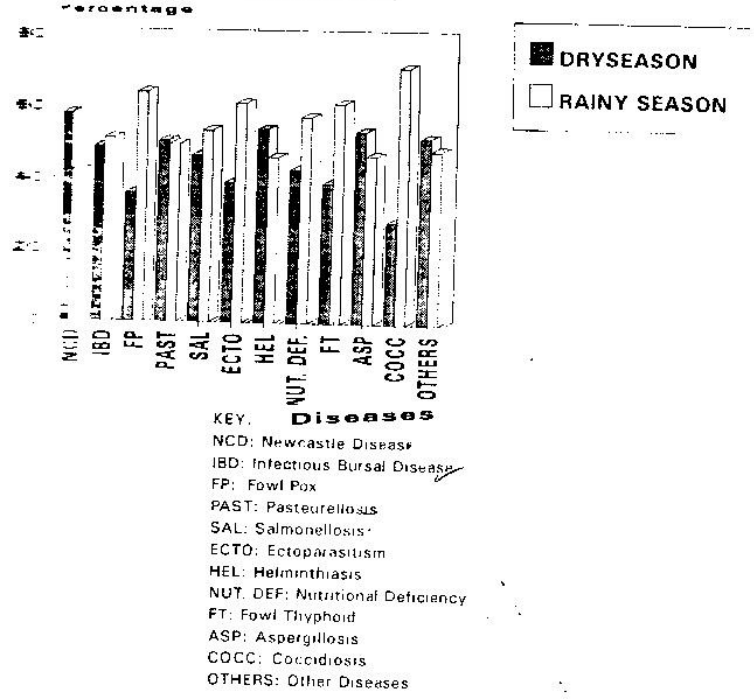
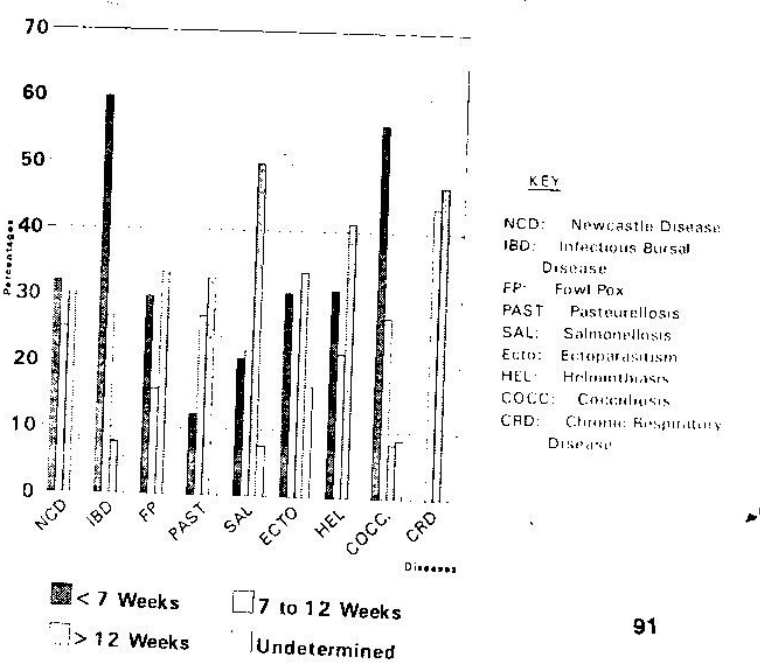


Fig. 2: Average age Distribution of Poultry Diseases in Zaria, Nigeria (1986 - 1995)



less than 7 weeks old. The high frequency of IBD outbreaks in May and June agrees with previous reports (Onunkwo and Momoh, 1981; Abdu *et al,* 1985; Tong *et al,* 1992). This might be attributed to an increase in the density of poultry as most farmers raise chickens, especially broilers during the Easter and Sallah seasons and/or an increased density of insect vectors at these periods. IBD was recorded in local chickens as was previously reported (Abdu, 1998; Kembi and Onifade, 1995). An infection rate of 9.1% was reported for IBD in Guinea fowls in Maiduguri area in Borno State, Nigeria (Ambali *et al,* 1991). There is therefore the need to determine the role of this species in the epidemiology of IBD as both chickens and guinea fowls are sometimes reared together under the free range system and also in some semi-intensive farms (Abdu *et al,* 1985).

Fowl pox was observed to be more prevalent in young birds and during the rainy season, when the density of mosquitoes is high. Mosquitoes are known to play a role in the transmission of Fowl pox (Abdu *et al,* 1992). Most cases of Fowl pox were observed in local birds. This might be due to the extensive husbandry system of raising local birds which increases the likelyhood of free birds coming into contact with infected birds.

Almost all cases of nutritional deficiency were recorded in exotic breeds under confined system of management. The extensive husbandry system with local chickens make nutritional deficiencies very unlikely. Infestation by ectoparasites was found to be more common during the rainy season and in local birds. This might be due to favourable climatic conditions for the development of various stages of the external parasities and the extensive system of management with local birds. The main source of ectoparasites for exotic birds are therefore the infested locals (Abdu *et al,* 1985). The high prevalence rate for chronic respiratory disease (CRD) in older birds agreed with previous reports (Abdu *et al,* 1985; Orajaka *et al,* 1995). Considering the possible role our local birds could play in the epidemiology of CRD, restriction of their movement is likely to reduce the infection rate to such farms. The addition of coccidiostats to commercial broiler and chick rations and proper litter management could reduce the incidence of coccidiosis.

From the results of this study, it is concluded that poultry diseases posed a serious threat to boosting poultry production. It is therefore recommended that efffective and uniform vaccination schedules be conducted to encourage positive and uniform response of birds as regards development of immune status. Likewise prompt and regular deworming and ectoparasite control coupled with improved feeding and management should be emphasised to increase birds resistance to infections thereby enhancing poultry production.

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