

# COCCIDIOSIS - AN IMPORTANT DISEASE AMONG POULTRY IN HIMACHAL PRADESH

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## INTRODUCTION

Coccidiosis caused *Eimeria* spp. is a major cause of morbidity and mortality among poultry in all age groups particularly under deep litter system. The disease occurs in intestinal forms that invade the mucosal epithelium. The disease often manifests in the form of outbreaks in young birds of 3-8 weeks of age and is characterised by anorexia, ill thrift, weight loss and an enlarged abdomen. Death of young birds are observed before oocysts are being passed in faeces. Several *Eimeria* species have been documented which vary in pathogenicity and occupy the small or large intestine, or both. Mortality varies with the species of *Eimeria* involved, immune status of the host and amount of inoculum. Medication first by sulphonamides and later by other drugs have effectively controlled the malady making poultry keeping a commercial proposition. However, occasional outbreaks are still not uncommon in commercial poultry keeping. Infections with coccidia are found in the intestinal tract often causing enteritis and diarrhoea. Coccidiosis is a major cause of mortality and sub optimal growth and conversion efficiency in immature flocks. The present communication describes the status of coccidiosis in different poultry farms in Himachal Pradesh.

## MATERIALS AND METHODS

The poultry carcasses submitted for routine disease investigation work was the subject of this study. These clinically affected birds belonged to different age group and breeds originating from private and government farms in Kangra, Una, Solan and Mandi district of Himachal Pradesh. Detailed post mortem examination was carried out and the samples were processed for diagnosis by gross, and microscopic examination. Wherever possible, the intestinal scrapings and the faeces were collected and subjected for sporulation at 28°C. Tissues samples were also processed for histopathological examination and any endogenous developmental stages. The various disease conditions associated were also recorded.



*Map of Himachal Pradesh showing the study area (thick arrow)*

## RESULTS AND DISCUSSIONS

Table 1 shows the results of the study and the diseases encountered in poultry for the last one decade. Among diseases encountered in poultry, coccidiosis was the single most important diseases in the form of outbreaks in all the poultry farms. Fig. 1 shows the prevalence of outbreaks of coccidiosis over a period of 10 years (1986-1990 and 1994-1998). The disease though was more prevalent in rainy seasons commencing from July outbreaks has been noticed during the rest of the seasons as well either alone or in association with other diseases like *A. galli* infection, Marek's disease, IBD, hydropericardium *etc.* Fig. 2 shows the month wise incidence of coccidiosis in various farms in Himachal Pradesh. The month wise cumulative data on coccidiosis revealed high prevalence during winter and rainy season with a slight recession during summer months. The stress factors associated with winter and host's susceptibility could be responsible for high prevalence in winter. The highest mortality and outbreak in monsoon is associated with favourable temperature and humidity. Though no attempt was made to detect the species involved in each case, almost all poultry species have been recorded at different occasion based on the sporulation studies and the morphology and the sites of development. Various *Eimeria* spp. which parasitize specific portions of the intestinal tract of chickens. Caecal coccidiosis caused by *E. tenella* and other intestinal forms, *E. acervulina*, *E. brunetti*, *E. necatrix* and *E. maxima* were the predominant species. The disease is characterised by weight loss, soft and watery faeces and severe dehydration before death.

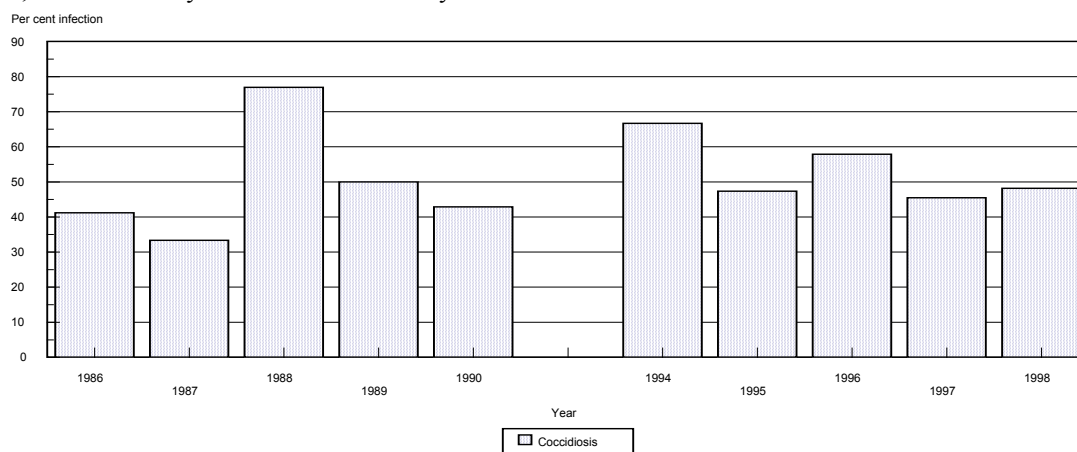


Fig. 1 Prevalence of coccidiosis outbreak among poultry during the last one decade

Poultry coccidia are ubiquitous but disease is most likely when young stocks are concentrated under conditions which permit the accumulation and sporulation of large number of oocysts. During the last one decade a number of anticoccidials have been used for controlling coccidiosis in chicks. These include Amproso 91 (amprolium hydrochloride, glaxo India Ltd.), Duocoxin (amprolium hydrochloride, GlaxoIndia Ltd.), Furazol (furaltadone hydrochloride, Pfizer Ltd.), Pequin (sulfaquinoxaline, Ranbaxy laboratories Ltd.), Coccistac (salinomycin, Hoechst Ltd.), supercox (sluphaquinoxaline and Diaveridine, Wockhardt Ltd) *etc.* The Significance of drug resistance of coccidiostat is yet to be established.

The other common diseases concurrently associated with coccidiosis include aflatoxicosis, fibrous bronchopneumonia, Ranikhet disease, toxemia, pneumonia, retention of yolk, ALC, salmonellosis, colibacillosis, necrotic enteritis, septicaemia, *E. coli* infection, trachitis, infectious coryza, fowl typhoid, aspergillosis, colisepticaemia, Gumboro disease, Marek's disease, fatty liver syndrome, riboflavin deficiency, *etc.*

**Table 1.** Clinical coccidiosis outbreak in different farms over the last decade

Months	Year										
	1986	1987	1988	1989	1990	1994	1995	1996	1997	1998	
Jan.	1	-	1	1	-	-	2	1	3	2	
Feb.	-	-	1	-	-	-	2	-	1	7	
Mar.	-	-	2	-	-	-	1	1	1	1	
Apr.	2	1	2	2	1	-	-	-	-	-	
May	-	-	-	1	1	-	1	1	1	-	
Jun.	-	-	-	-	-	-	1	1	-	1	
Jul.	1	-	2	-	1	-	2	-	3	2	
Aug.	1	-	2	2	-	5	1	-	1	-	
Sep.	2	2	-	-	-	4	1	-	-	-	
Oct.	-	-	-	-	-	-	-	3	-	-	
Nov.	-	-	-	-	-	1	3	2	-	-	
Dec.	-	-	-	-	-	8	4	2	-	-	
Total (86)	7	3	10	6	3	18	18	11	10	13	

Total outbreaks: 164, Coccidiosis: 86

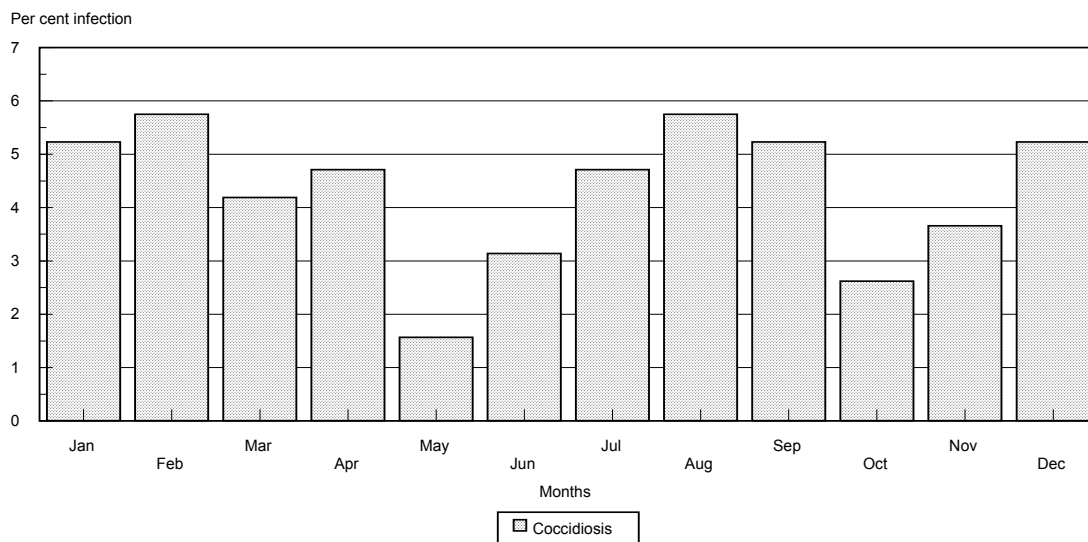


Fig. 2 Coccidiosis outbreak in different months (cumulative data over 10 years)

**CONCLUSIONS**

Coccidiosis in poultry poses a great economic loss due to high rate of morbidity and mortality, poor weight gain and feed conversion and loss of egg production. It still remains one of the major disease problems in the poultry industry in spite of the availability of very effective drugs.