

Prevalence of *Eimeria* Infection in Broiler Chicken of Osmanabad district, Maharashtra

B. V. MORE, N. Z. DESHMUKH* AND S. V. NIKAM **

Department of Zoology, Ramkrishna Paramhansa Mahavidyalaya, Osmanabad. MS. India.

* Department of Zoology, HPT Arts and RYK Science College, Nasik, MS. India. nzdeshmukh@gmail.com

** Protozoology Laboratory, Department of Zoology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, MS. India. drbabasahebmore@gmail.com

ABSTRACT

During a period of 12 month i.e. from February - 2015 to January 2016, 1324 Broiler Chicken. Samples were examined for coccidial infection, out of which 470 sample were positive, the percentage of prevalence being 35.49%.

Keywords: *Coccidiosis, Eimeria, Oocysts, Broiler Chicken.*

INTRODUCTION

The coccidia consist of a wide variety of single-celled, parasitic animals in the subkingdom Protozoa of the phylum Apicomplexa. As a group, the coccidia of the genus *Eimeria* are host-specific i.e. each species occurs in a single host species or a group of closely related hosts. Infection by coccidia in sufficient numbers to produce clinical manifestations of disease. A light infection that does not result in demonstrable clinical effects. The species of coccidia in the chicken belong to the genus *Eimeria*. The largest genus, and may be the most specious genus of all animal genera. Coccidia have a complex life cycle and other unusual characteristics which have stimulated investigations that include various species responsible for the disease coccidiosis. These species cause pathological damage and mortality in poultry, cattle, sheep, goat, pig, rabbit and other animals. The genus *Eimeria* Schneider, 1975, with more than 1400 species by increasing number of biologists. The coccidia have enhanced medical as well as veterinary and general biological importance.

MATERIALS AND METHODS

The material for the study of coccidia of chicken was obtained from various slaughter houses as well as from different fields in and around Osmanabad district (M.S). The different parts of alimentary canal of slaughtered chicken were examined.

The faecal contents were diluted with distilled water and sieved to remove the large faecal debris. After repeated washing the oocysts were concentrated by centrifugation at 3000 rpm for 10 minutes. The oocysts were then spread out in shallow Petri dishes and covered with 2.5% solution of potassium dichromate for sporulation.

RESULTS AND DISCUSSION

During the present study comparative analysis has been made of the prevalence of coccidia in Broiler Chicken. The study was based on sample collected from various localities in and around of Osmanabad district of Maharashtra State during a period of one year i.e. from February, 2015 to January, 2016. During a period of 12 months (February, 2015 to

January, 2016) 1324 Broiler Chicken samples were examined for coccidial infection, out of these 470 samples were found to be positive. The presentage prevalence being about 35.49%.

A month wise analysis of 12 months prevalence showed that maximum prevalence during July was 49.6% followed by August, September, June, October, November, December, January, February as 47.14%, 46.15%, 44.64%, 44.44%, 42.51%, 38.46%, 35.45%, 25.49% respectively. Whereas the lower prevalence was during, march, April and May was found 16.66%, 10.66%, 5.61% respectively. The pattern suggests that the peak is in the monsoon rains. The prevalence then gradually reduces after rainy seasons through winter months and reaches a low with the onset of summer.

Table 1

Prevalence of incidence of coccidia in Broiler chicken in Osmanabad District during summer season (February, 2015 to May, 2015).

Period	No. of sample		% of Prevalence
	No. of sample examined	No. of Sample positive	
February, 15	102	26	25.49%
March, 15	120	20	16.66%
April, 15	75	08	10.66%
May, 15	89	05	5.61%

Table 2

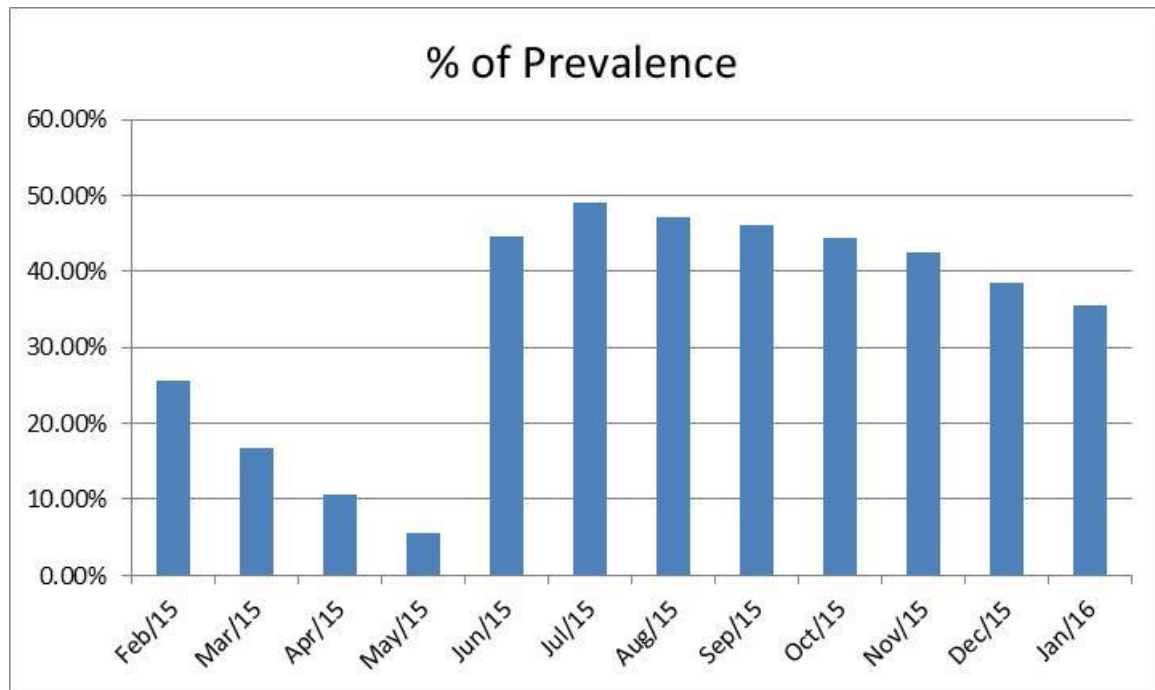
Prevalence of incidence of coccidia in Broiler chicken in Osmanabad district during Monsoon season (June, 2015 to September, 2015).

Period	No. of sample		% of Prevalence
	No. of sample examined	No. of Sample positive	
June, 15	112	50	44.64%
July, 15	125	62	49.6%
August, 15	140	66	47.14%
September, 15	130	60	46.15%

Table 3

Prevalence of incidence of coccidia in Broiler chicken in Osmanabad District (M.S.) during winter season (October, 2015 to January, 2016).

Period	No. of sample		% of Prevalence
	No. of sample examined	No. of Sample positive	
October, 15	90	40	44.44%
November, 15	127	54	42.51%
December, 15	104	40	38.46%
January, 16	110	39	35.45%



Graph 1. Month wise prevalence of coccidia in Broiler chicken in Osmanabad district (M.S.) during February 2015 to January 2016

ACKNOWLEDGMENT

The authors are very much thankful to the U.G.C. WRO Pune for providing the financial assistance under Minor Research Project F.No.47-947/14./2015 and also thanks for Principal Ramkrishna Paramhansa Mahavidyalaya, Osmanabad (M.S.) India for providing the laboratory facilities during this work.

REFERENCES

1. Abdurrahman, G. 2007. The prevalence of Eimeria species in goats in Igdir. Turk. J. Vet. Anim. Sci. 31(6): 411-414.
2. S. V. Nikam, P. S. Tayade. 2009. Seasonal incidence of chicken coccidia in Jalna (Maharashtra) National Journal of Life Sci.. 6(3) (357-358).
3. Chakravarthy, M. M and Kar, A. B. 1947. Studies on the coccidian of the Indian birds. Proc. Soc. Edin. 62(B):225-233.
4. Tyzzer, E. E. 1929. Coccidiosis in gallinaceous birds. Amer.J. Hyg. 10: 269-283.
5. Yakhchali, M and Golami, P. 2008. Eimeria infection (Coccidia: Eimeriidae) in sheep of different age groups in Sanandaj city. Vet. Arhiv. 78(1):54-64.
6. Yakhchali, M. and Zarei, M. R. 2008. Prevalence of Eimeria infection in sheep of Tabriz suburb, Iron. Iranian. J. Vet. Res. Shi..Uni.. 9 (3): 24.
7. Dai, Y. B., Liu, X. Y. and Tao, J. P. 2006. Pathogenic effects of the coccidium Eimeria ninakohlyakimovae in goats. Vet. Res. Commu. 30:149-160.
8. Nikam 1983. Studies on the protozoan parasites of some mammals. Ph.D. Thesis, Marathwada University Library Aurangabad.
9. Jadhav, V. D. 2002. Studies of coccidial fauna from marathwada region. Ph.D. Thesis Marathwada University, Library Aurangabad.

10. Bhimrao N., Jadhav, B. N. and Nikam, S. V. 2014. Study of seasonal incidence of chicken coccidiosis in Gangapur and Vaijapur Tehsil of Aurangabad district in Maharashtra. *International Journal of Applied Science – Research and Review IJAS* 1:(3)093-097.
11. Nikam, S. V., More, B. V., Jadhav, B. N., and Bhamre, S. N. 2009. Prevalence of Eimeria infection in sheep of Beed district, Maharashtra. *Life Sci. Bulletin.* 6(3) (401-403)
12. Nikam, S. R. 1999. Species Composition and relative prevalence of Eimeria in sheep and goat from marathwada region (Maharashtra). *Eco. Env. Cons.* 5: 211-213.
13. Jadhav B. N. 2009. Study of chicken coccidiosis in Broiler Chicken in Aurangabad district Dr. B. A. M. University library Aurangabad.
14. Sontakke, T. A., Kanse, V. S., Bansode, V. K., Lokhande, S. C., and Nikam, S. V. 2015. Occurrence of Coccidian parasites in sheep in Omerga region, *International J. of Life Sciences.* A3:92-94.
15. Nikam S. V., Kanse V. S., Jadhav B. N. and Jaid E. L. 2012. Comparative study of seasonal incidence (Monsoon) of Chicken Coccidia on different eight district, Marathwada region (M.S.) *Journal of Exp, Sci.* 3(5):38-41.
16. More B. V. 2011. Comparative study of species composition of coccidia in sheep and goat in Beed district, Dr. B. A. M. University Library Aurangabad.
17. Jadhav, B. N., Nikam, S. V., More, B. V., and Bhamre, S. N. 2009. Comparative Prevalence of Eimerian species in Broiler chicken, *Life science Bulletin.* 6(3) (393-396)
18. More, B. V., Nikam, S. V., Deshmukh, N. Z., Bhamre, S. N. and Jaid, E. L. 2011. Percentage prevalence of Eimerian species composition of sheep and goat from Beed district, Maharashtra *Recent research in science and technology.* 3(8): 24-26.
19. Willians, R. B. 1999. A compartmentalised model for the estimation of cost of coccidiosis to the world's chicken production industry, *International J. of Parasitology.* 29:1209-1229.