OCCURRENCE AND SEASONAL DYNAMICS OF CESTODE OF THE GENUS *COTUGNIA* DIAMARE, 1893 FROM *GALLUS GALLUS DOMESTICUS*

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ABSTRACT

Present investigation deals with the occurrence and seasonal dynamics of cestode, *Cotugnia,* Diamare 1893 from the intestine of *Gallus gallus domesticus,* at different collection sites of Nanded district (M.S.) India during June 2018 to May 2019. The high incidence of infection of *Cotugnia,* Diamare 1893 was recorded in summer season (76.66%) followed by winter season(56.66%) whereas infection was low in monsoon season (30.00%) respectively.

Key words: Avian cestode, *Cotugnia,* Diamare 1893, *Gallus gallus domesticus,* Seasonal dynamics.

INTRODUCTION

Parasitic diseases are among the major constraints of poultry production. The common internal parasitic infections occur in poultry include gastrointestinal helminthes (cestodes, nematodes) and Protozoan (Eimmeria species). Nematodes belong to the phylum Nemathelminthes, class Nematoda; whereas Tapeworms belong to the phylum Platyhelminthes, class Cestoda. Nematodes are the most common and most important helminth species and more than 50 species have been described in poultry; the majority of which cause pathological damage to the host. The life cycle of gastrointestinal nematodes of poultry may be direct or indirect but Cestodes have a typical indirect life cycle with one intermediate host.

Parasitic infections are considered to be the major constraint to the economy of farmers by reducing the growth and production of livestock. The desi birds are reared by rural farmers in their backyard without following any scientific feeding practices and medication, where they are more prone to parasitic infection as compared to birds reared on intensive farming though their produce viz. eggs and meat fetches a much higher price than that from commercial poultry. Parasitism inflict heavy economic losses to poultry industry particularly of free range chicken in rural house hold in the form of anorexia, retarded growth, reduced weight gain, decreased egg production, diarrhoea, intestinal obstruction, morbidity and mortality (Anwar et al. 1991; Shah et al. 1999; Dube et al. 2010; Katoch et al. 2012).

Although several reports on prevalence of parasites in desi fowl have been reported from different parts of world, it is still necessary to carry out epidemiological studies in other parts of country in view of the changing dynamics of parasitic infections and to follow appropriate control measures. However, detailed reports on prevalence of gastrointestinal parasites in desi fowl of this region could not be found in the available literature except for few studies. Hence, a study was undertaken to find out the incidence of Cestode parasites of *Gallus gallus domesticus* of Nanded District for a period of one year.

The present investigation deals with the study of incidence of Cestode parasites of *Gallus gallus domesticus* of Nanded District.

MATERIALS AND METHODS

Present investigation deals with the occurrence and seasonal dynamics of Cestode from the intestine of *Gallus gallus domesticus,* at different collection sites of Nanded district (M.S.) India during June 2018 to May 2019. In the present study 180 intestine of *Gallus gallus domesticus* were examined for Cestode infection. Out of 180 intestine of *Gallus g.domesticus* 98 (54.44%) were positive with Cestode infection. Collected Cestodes

were preserved in hot 4% formalin, stained with Borax carmine, dehydrated in asending grades of alcohol, cleared in xylene, mounted in D.P.X. These Cestodes were identified by standard methods. On taxonomic observations the Cestodes are identified as *Cotugnia*, Diamare 1893. Obtained data were recorded; processed for study of seasonal variation.

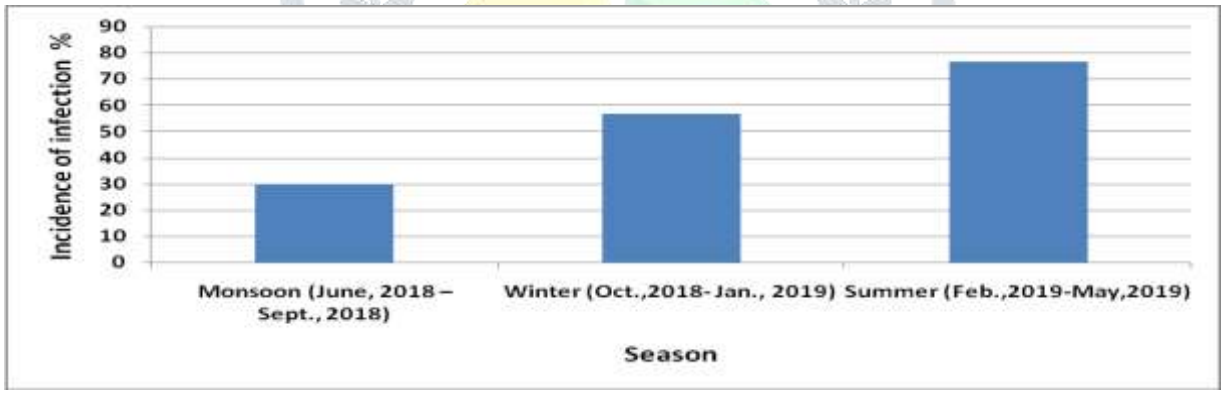
RESULTS AND DISCUSSION

A study was carried out to know the Seasonal incidence of gastrointestinal Cestodes in desi fowl *Gallus gallus domesticus* from different collection sites of Nanded for a period of 1 year. Results of present studies on incidence of infection of cestode, *Cotugnia*, Diamare 1893 from *Gallus gallus domesticus* are presented in Table No. 01 & Graph 1. The high incidence of infection of *Cotugnia*, Diamare 1893 was recorded in summer season (76.66%) followed by winter season (56.66%) whereas infection was low in monsoon season (30.00%) respectively. According to Kennedy C.R. (1976) in his report stated that temperature; humidity, rainfall, feeding habits of host, availability of infective host and parasite maturation are responsible for influencing the parasitic infections. High temperature, low rainfall and sufficient moisture ware necessary for development of parasite were reported by Jadhav and Bhure, (2006).

Table 1- Incidence of infection cestode, *Cotugnia*, Diamare 1893 from intestine of *Gallus gallus domesticus* during June 2018 to May 2019.

Seasons	Number of host Examined	Number of host Infected	Incidence of Infection %	Number of parasites collected
Monsoon (June, 2018 –Sept., 2018)	60	18	30	26
Winter (Oct.,2018- Jan., 2019)	60	34	56.66	43
Summer (Feb.,2019-May,2019)	60	46	76.66	65
Total	**180**	**98**	**54.44**	**134**

Graph 1- Incidence of infection cestode, *Cotugnia*, Diamare 1893 from intestine of *Gallus gallus domesticus* during June 2018 to May 2019.



Results of present investigation are in agreement with Bhure et.al.,2018 reported incidence of infection of *Gangesia marathwadensis* from *Wallago attu* in Summer (75.00 %) followed by Winter (46.25 %) whereas infection was low in monsoon (22.50%). Bhure and Nanware, 2014 reported high incidence of infection of *Cotugnia dignopora, Cotugnia diamarae* and *Raillietina (R.) domestica* in summer (75%, 67.85 % & 71.42%) followed by winter (60%, 52 % & 48%) whereas low infections in monsoon season (38.09%, 33.33% & 38.09%). Bhure and Nanware, 2014 recorded high incidence of infection of *Senga sp., Gangesia sp., Proteocephalus sp.* infected to *Channa sp.* was in summer (76.66 %, 73.33 % & 70.00 %) followed by winter (65.21 %, 52.17% & 56.52%) whereas infection was low in monsoon (36.84%, 26.31% & 31.57%). Shahin et.al., 2011 studied prevalence of Chicken Cestodiasis in Egypt and reported highest incidence in summer 5.54% and Autum 5.6% and lowest incidence during Winter 3.3% and Spring 2.2%. Bhure et al., 2013 studied diversity and prevalence of avian cestodes and reported high prevalence in summer where as low in monsoon season. Bhure et. al., 2010 reported high incidence (51.78%), intensity (1.18%) and density (0.613%) of *Rhabdocona sp*. in summer followed by winter and rainy season.

Analyzed of present study shows high Prevalence in summer followed by winter where as low in monsoon due to environmental factors and feeding habitat influence the seasonality of parasitic infection either directly or indirectly. This study on prevalence of gastrointestinal parasites in desi fowl, *Gallus gallus domesticus* facilitates to device new ways and methodologies to follow the appropriate chemo-immunoprophylactic strategies as one of the control measures.

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