

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

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ABSTRACT

This investigation deals with the occurrence and seasonal dynamics of cestode parasite, *Cotugnia*, Diamare 1893 from the intestine of *Gallus domesticus*, at different collection sites of Umardhed and allied area (M.S.) India during June 2021 to May 2022. The high incidence of infection of *Cotugnia* was recorded in summer season (72.5%) followed by winter season (45.00%) whereas infection was low in monsoon season (30.00%) respectively.

Key words: Cestode, *Cotugnia*, *Gallus*.

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 trematodes) and Protozoan (*Eimeria* species). Nematodes belong to the phylum Aschelminthes, class Nematoda; whereas flatworms belong to the phylum Platyhelminthes, class Cestoda and Trematoda. Nematodes are the most common and most important helminth species and more than 52 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 (Without larvae) or indirect (with larval stage) 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, Development 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 cause heavy economic losses to poultry industry particularly of free range chicken in rural house hold in the form of retarded growth, reduced weight gain, decreased egg production, intestinal obstruction 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 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 Umardhed and allied area for a period of one year.

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 Umardhed and allied area (M.S.) India during June 2021 to May 2022. In the present study 240 intestine of *Gallus gallus domesticus* were examined for Cestode infection. Out of 240 intestine of *Gallus g. domesticus* 118 (49.16%) were positive with Cestode infection. Collected Cestodes were

preserved in hot 4% formalin, stained with Borax carmine, dehydrated in 30%, 50% 70% 90% & absolute alcohol (ascending grades) 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.

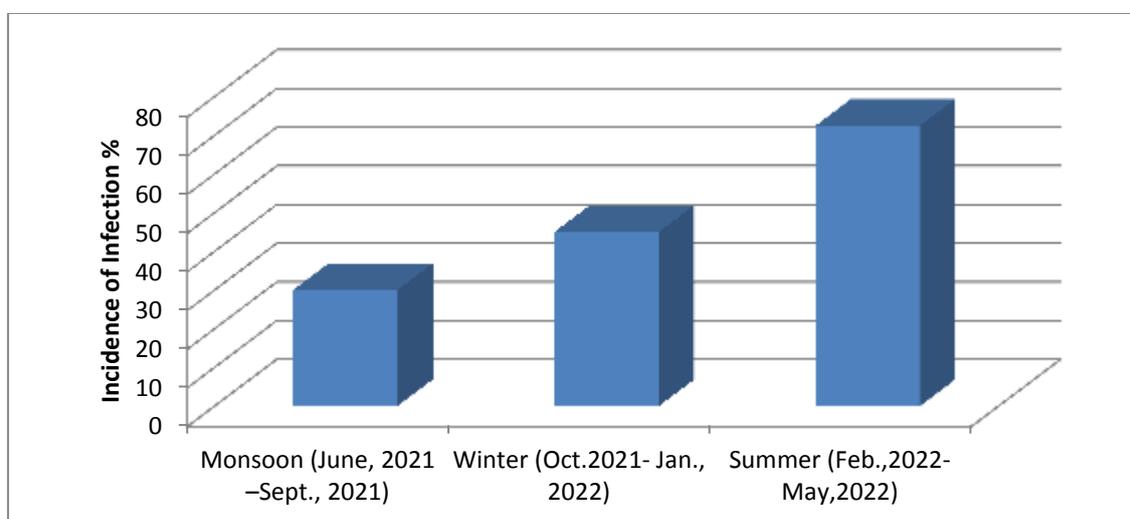
RESULTS AND DISCUSSION

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 (72.5%) followed by winter season (45.00%) 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 were 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 2021 to May 2022.

Season	Number of host Examined	Number of host Infected	Incidence of Infection %	Number of parasites collected
Monsoon (June, 2021 –Sept., 2021)	80	24	30	36
Winter (Oct.2021- Jan., 2022)	80	36	45	60
Summer (Feb.,2022-May,2022)	80	58	72.5	102
Total	240	118	49.16	198

Graph 1- Incidence of infection cestode, *Cotugnia*, Diamare 1893 from intestine of *Gallus gallus domesticus* during June 2021 to May 2022.



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%). Shahin et.al., 2011 studied prevalence of Chicken Cestodiasis in Egypt and reported highest incidence in summer 5.54% and Autumn 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 such as rainfall, temperature and feeding habitat influence the seasonality of parasitic infection either directly or indirectly.

ACKNOWLEDGEMENTS

The authors express sincere thanks to Principal, G.S. Gawande College Umarkhed, Head department of Zoology, Librarian for facilities provided.

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