

FAUNAL DIVERSITY OF NEMATODE PARASITE OF *GALLUS DOMESTICUS* L. FROM TRIABLE DISTRICT NANDURBAR (M.S.) INDIA

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ABSTRACT

The present study of nematode parasite according to prevalence in their abundance in the host *Gallus gallus domesticus* L from triable distric Nandurbar (M.S.) India. Nandurbar is one of the tribal districts of Maharashtra State. A total 300 hosts intestine were collected and brought into laboratory from different localities of Nandurbar District. During June 2016 to May 2017 for one annual cycle, out of 300 host, 101(33.66%) were infected with 133 nematode parasite. On intestinal examination of the two species of genera *Ascaridia* Duj 1845 and *Heterakis* Duj 1845 are recovered. Seasonal variation also have great impact on occurrence of these nematode parasite. The high incidence of infection had recorded in monsoon continued by decreasing in winter and summer. The domestic fowl was highly infected by *Ascaridia galli* (32%) as compared to *Heterakis gallinarum* (12.33%). There is no report available regarding the population dynamics of nematode parasite of domestic fowl from this region. This information will essentially be helpful for the researcher and local veterinarians to develop strategies for both treatment and control of these nematode parasite affecting native poultry.

INTRODUCTION

Domestic fowl have an important role in the provision of animal protein to human being and this bird is infected by various kinds of helminthes. The nematode parasite infection is of considerable importance because it is responsible for stunted growth, emaciation, weakness and death, while in laying domestic fowl the egg production was lowered or entirely stopped. The nematode parasite cause severe effect on energy metabolism of the host to compensate for tissue and other pathological effects.

Domestic fowls suffer from various diseases due to unhygienic standard, unorganized agriculture sector, large number of marginal farmers and landless laborers follow the traditional methods of live stock rearing. At the same time, it provides excellent opportunity for gainful employment to the members of rural communities, S. A. Bhat (2014). However, domestic fowls have high market value because of taste, but these domestic fowls habitat is improper due to that it effects on meat quantity and quality with low egg production sometimes mortality due to high infection of nematode parasite and low economic return.

Nandurbar District is located at the edge of Maharashtra Northern boundary enveloped by Madhya Pradesh on the North and the East and Gujarat on the West. The District is recognized for its tribal population and undulating landscapes of the Satpuda ranges on the Northern end of the District, Tapi running across the District and Narmada in the North. The District can be divided into two broad physiographic parts. One is hilly terrain of Satpuda ranges prominently dominated by tribals. Second part is Tapi river basin, which is comparatively more fertile and has good irrigation facilities. The District has dry climate in general, The temperature attained is of typical of tropical temperature zone. The summer is intolerably hot. The average rainfall in the District is about 888mm and it is not uniform in all parts of the District.

Population dynamics of nematode parasite in domestic fowls was undertaken to investigate the innate factor and morphological character. Such as season, temperature, humidity, age of the host. The present communication was for application of statistical methods to understand the distribution of nematode parasite of population levels for three seasons i.e. monsoon (Rainy), winter and summer.

MATERIALS AND METHODS

Samples Collection:

Intestines of 300 domestics fowls were collected and examined for nematode infection during the period between Jun-2016 to May-2017 in all seasons from different localities in Nandurbar District.

Observation and examination:

Intestines were examined, each part was critically observed for nematode infection and nematodes transferred into Petri dish containing distilled water.

Nematode fixation:

Nematodes were killed by ethyl alcohol and preserved in 10% glycerol. Loctophenol was used as clearing agent followed by mounting in glycerine jelly.

Identification of species:

Prepared slides of nematode was used for genera and species identification done with the help of Systema Helminthum (Vol-III) Part I and II and drawings are made with aid of Camera Lucida.

RESULT AND DISCUSSION

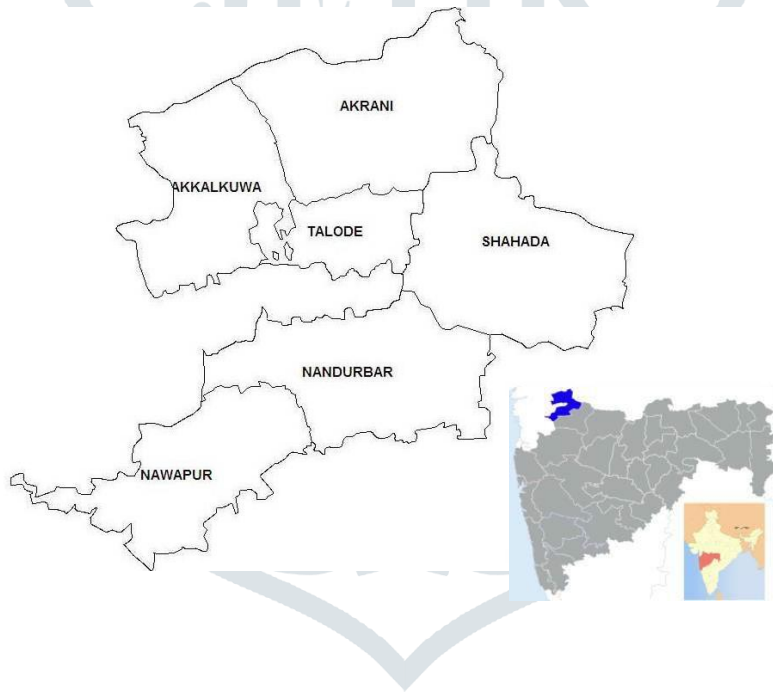
The present study indicates that out of 300 domestic fowl 101 were infected with 133 nematode parasite (33.66%). 96 nematode parasite was from genus *Ascaridia* Duj 1845 and species recovered was *Ascaridia galli*, Schrank, 1788 secondly 37 species was from genus *Heterakis*, Duj 1845 with species *Heterakis gallinarum*, Schrank, 1788 are recovered. The seasonal variation had great impact on population dynamics of nematode parasite. The seasonal variation on nematodes infection showed the maximum infection occurred in Monsoon season followed by decreasing in Winter and Summer season.

Seasonal Factors was reflected in seasonal incidence of infections, for the development of nematode parasites need temperature, humidity and rainfall that helps in the development one propagation the parasite as well as the intermediate host. High rainfall during rainy season help in providing suitable molarity of salts in soil which is an important factor for ecdysis (Soulsby, 1966). The population dynamics in May could be due to harsh climatic conditions like high temperature, low humidity and absence of rainfall. These study correlate with the reports by S.A. Bhat, *et al* (2014) who recorded highest prevalence (83.33%) in Monsoon season from North Indian Region. However, Balde, *et al* (2009) recorded highest occurrence (42.66%) in Summer of nematode parasite from Nanded region. Moreover, the present finding indicated higher infestation of *Ascaridia galli* with (72%) in the month of August and lowest in the months of May and April with (4%) comparatively *Heterakis gallinarum* had low in occurrence i.e. this species was highest recorded in month of June with (44%) and in the month of March, April and May with no record

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FROM NANDURBAR (M.S.) INDIA DURING JUN-2016 to MAY-2017**

Name of Month	No. of Host Examined	No. of Host Infected	No. of Nematode Recovered		Nematode Recovered in Each Month	Prevalence (in %)	Locality
			<i>A. galli</i>	<i>H. gllinarum</i>			
June	25	16	15	11	26	64	Akrani
July	25	14	13	09	22	56	Shahada
August	25	18	18	07	25	72	Akkalkuwa
September	25	11	12	04	16	44	Nawapur
October	25	09	08	02	10	36	Nandurbar
November	25	07	10	02	12	28	Talode
December	25	09	08	01	09	36	Nawapur
January	25	05	05	00	05	20	Akkalkuwa
February	25	08	04	00	04	32	Akrani
March	25	02	01	01	02	08	Nandurbar
April	25	01	01	00	01	04	Shahada
May	25	01	01	00	01	04	Talode
Total	300	101	96	37	133	33.66%	

MAP SHOWING STUDY AREA NANDURBAR DISTRICT



Poultry can easily be infected with diseases mainly caused by parasitic pathogens. However, nematode infections are often neglected in this area. It often constitutes to low productivity and impairs the health status of poultry. Present study revealed nematode infections of domestic fowl from Nandurbar District is due to poor hygiene, the lack of anti-parasite treatment and poor hygiene nutrition. However, the population dynamics of nematode parasites in native poultry particularly in domestic fowl from Nandurbar need more investigation, thus further, research should be designed for controlling intestinal nematode parasite in native and rare poultry.

REFERENCES

- Anderson, R.M. (1976):** Seasonal variation in the population dynamics of *Caryophyllacus laticeps*. Parasitology (72): 281-395.
- Balde, et al (2009):** Survey of nematode parasites from edible birds in relation to ecological factors from Nanded region (M.S) J. Aqua Vol. 10 (1), 69-72.
- Esch, C.W. (1977):** Regulation of parasitic population academic press, INC, New York.
- Hiware, C.J. (1999):** Population dynamics of the *Caryophyllaeid* cestode parasitizing freshwater air breathing predatory fish *Clarias batrachus*, L Rivista Di Parasitologia Vol. XIX (LXIII) N-1 April 2002.
- Khera, (1956):** Nematode parasites of some Indian vertebrates. Ind. J. Helm. 6(2):27-133.
- Magbool, A. Ahmad, M. (1998):** Prevalence of helminth parasites of poultry under different management conditions. Jour. Fac. Vet. University of Tehran 53(2) : 102-103.
- Nandi, P.A. Gerge, S.O. (2010):** A cross-sectional survey on parasites of chickens in selected villages in the sub humid zones of southeastern Nigeria. J. Parasitol Res: 14:18-24.
- S.A. Bhat, et al (2014):** Prevalence of endoparasites in backyard poultry in North Indian region, a performance based assessment study. Asian. Jour. Ani Vet. Adva, 1-10.
- Soulsby, E. J.L.(1966):** Biology of parasites academic press, London.
- Thaper, G.S. (1956):** Systematic survey of helminth parasites of domesticated animals in India J. Vet. Sci. and Anim. Husb. (26): 211-271.
- Yadav, A. K. and Tondon, V. (1991):** Helminth parasitism of domestic fowl (*Gallus domesticus* L.) in a subtropical high rainfall area of India. Beitr. Trop Landwirtsch Veterinarmed 29: 97-104.
- Yamaguti S. (1961):** Systema Helminthum Vol.III. The nematodes of vertebrates Part-I and II Interscience Publishers Ltd. London.