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Ecological survey of endoparasites from alimentary canal of *Gallus gallus domestics* at Bhokardan Dist. Jalna. (M. S.)

* Laxmikant Shinde, ** Baba Jadhav & ***Lanka L. P.

* Dept. of Zoology J. E. S. College, Jalna. Dist. Jalna (M. S.)

** Dept. of Zoology Dr. B. A. M. University Aurangaba. M. S.

*** Dept. of Zoology Devchand College, Arjun Nagar. Dist. Kolhapur (M. S.)

kantshinde@yahoo.co.in

Abstract

An ecological survey is very important to know the present status of ecological component. Population study is the basic note for ecological survey.

Theis study is carried out from September 2005-May 2006 at Bhokardan Dist. Jalna. (Maharashtra). During survey we visited number of chicken shops in city and collected intestine of *Gallus gallus domesticus* (i.e. Hen) only. It shows high density of infection with Cestode parasite and low with Nematode parasites.

Key Words: Survey, Parasites, Density, and Infection

Introduction:

The major group of animal kingdom that have all of significantly a large number of species of parasites are protozoa, platyhelminthes, acanthocephalan, nematoda, arthropoda and few other rather significant on. Each of these groups is extremely dynamic and very interesting structurally, biologically, pathologically, ecologically and in so many other ways. (M. Shamim Jayrajpuri 2005) Compare to other vertebrate the birds and mammals are suitable host for helminth parasites diversity due to its homoeothermic characteristics. World wide parasitological survey indicates maximum infection and diversity of helminth parasites from birds and mammals. Nematode and Cestode are the common worms of these hosts. A wide diversity of intestinal helminth parasites in chicken are *Ascardia galli, Capillaria spp., Raillietina,Cotugnia,, Davienea, Heterakis gallinarnum*. (Dulal Krishna Roy 2003, Beatriz Rodriguez Ortiz et. al. 2004, Y. Eshetu, et. al. 2001). Over all study about Indian infection and diversity of helminth indicate also the same observation. (Nama H. S.

1976, Yadav A. k. and Tondan Veena 1977, Baba Jadhav 1999, Malhotra S. K. 2000, Hiware C. J. 2001, Babare et. al. 2001, Shinde L. V. et. al. 2004,)

Our research article also focuses on the ecological survey of intestinal parasites of *Gallus gallus domesticus*. Of all the helminth specimens collected from Bhokardan, only few were used for collection. Biodiversity and conservation is the completion opf information through biological survey and in ventures. It is one of the most important components of this work. Considering this importance these database (Survey) and genera wise identification of parasites have been done.

So the objective of this paper is to update all available database formation of the intestinal parasites of *Gallus gallus domesticus* . We hope the database work help us in future for biodiversity and conservation planning.

Material and Methods:

The study was conducted during September-2005to May 2006 from Bhokardan taluka Dist. Jalna in Maharastra. The intestines of chicken were collected from local market regularly twice in a week on Wednesday and Saturday. Brought to the laboratory and open the alimentary canal from oesophagus to rectum including both caecal tubes.

All worms visible to necked eye were removed using thumb forceps and zero no. brush. These worms were separated i.e. Cestode and nematode. Maintained the data for analysis like prevalence, density, diversity etc. (Anderson R. M., 1974) Cestode were flat, preserved in 4% formalin and stained with haematoxylin for identification. Nematode were fixed in glycerol jelly and observed under the camera Lucida (Frances Weesner 1964). All the adult worms were identified in the Parasitology laboratory Dept. of Zoology Dr. B. A. M. University Aurangabad. (M. S.) by Prof. Baba Jadhav.

Results / Observations:

Our ecological survey was carried out with 229 domestic (Deshi) chicken examined from Bhokardan market. In this study 73.79% (169) birds were found to be infected with gastrointestinal helminth. (Only Cestode and Nematodes were observed during study). The high rate of infection 100% (24/24) was found in the month February-2006, low infection intensity 50.33% (14/24) in April 2006.

Table; I shows infection of helminth parasites during Sept.-2004 to May- 2005

Sr. No.	Month & Year	Examined intestine	Infected intestine	Collected Cestode	Collected Nematode
1	Sept- 05	29	23	89	45
2	Oct-05	18	16	40	36
3	Nov-05	18	14	27	12
4	Dec-05	32	30	Nil	76
5	Jan-06	41	34	66	90
6	Feb-06	24	24	104	25
7	March-06	27	12	33	18
8	April-06	24	14	26	Nil
9	May-06	16	12	43	10

Number indicates quantitatively.

Table II; shows incidence of infection and intensity of parasite infection

Sr. No.	Month & Year	Incidence of infection	Intensity of infection	Intensity of Cestode	Intensity of Nematode
1	Sept- 05	88.00	5.73	66.42	32.58
2	Oct-05	88.88	4.75	52.64	47.36
3	Nov-05	77.77	2.78	52.64	47.36
4	Dec-05	93.75	2.55	Nil	100
5	Jan-06	82.92	4.58	52.41	57.59
6	Feb-06	100.00	5.37	80.63	19.57
7	March-06	44.44	4.25	64.71	35.29
8	April-06	58.33	1.85	100	Nil
9	May-06	75.00	4.41	81.14	18.86

All numbers expressed in percentage.

Regarding parasitic diversity and population study Cestode indicates abundance population, nematode indicates low. In Cestode common genera *Raillietina*, were survive successfully, *Ascardia* and *Heterakis* having common nematode of chicken are survive greatly.

Results briefly expressed as;

1. Diversity of parasites
2. Prevalence of infection
3. Infection intensity

Discussion;

Diversity of helminth parasite studied from last 5-6 decades and too much discovered about them but work is going continuously till today. The diversity of only Nematode recorded more than 100000 spp. Now a day number of worker engaged in that field. Some of them have discovered n. sp. and new genera also. Their contribution in this field is remarkable.

Ecological survey proved that mammals and birds play an significant role in the diversity of helminth parasites due to its homoeothermic characteristics.

World wide chicken, fish etc. are major sources of food now a days it is great source of income. As per economic consideration they have not maintain properly in rural area, there is no form house for deshi chicken so there are more chances of infection with various kinds of diseases. Literature shows 60% of poultry birds infected with helminth parasites (Dulal Krishna Roy Report -2003, page. 301). Compared to poultry bird maintenance of deshi chicken is negligible. Deshi chicken as well as poultry birds of developing country from Asiatic region indicate more infection and diversity of helminth parasites comparatively with developed country (www.fao.org)

All literature survey about intestinal helminth diversity indicate in (nearly) all publication as, *raillietin, davienea, capillaria, ascardia, and heterakis* a large number of helminths are still widely distributed through out the world in free range poultry (Pandey et. al. 1992, Bagust 1994, Permin et. al 1997, Permin and Hansen 1998). In India various parasitologist and zoologist have studied from 1950 in Uttar Pradesh 95% by Faithu et. al., 90.9% by Yadav AK and Tandon V. 1991, 90.2% Chand in Uttar Pradesh, 90% by Shah and Pandit, 1959 in Mhow, 90% by Fabiy, 80.50% by Hedge et. al. 1973 in Mysore, Shastri et. al. 1974 in Maharastra, 80% by Damodaran and Thanikachlam, 1974 in Madras, India, 79.9% by Bali and Kalra, 1975 in Punjab, 76.5% by Virk et al., 1987 in Chandigarh, India; 76.2% by Kaushik, 1968 in Uttar Pradesh, 74.3% by Gogoi, 1975 in Assam, 71% by Dutt, 1950 in Uttar Pradesh, 66% by Joshi and Kamalapur, 1972 in Madhya Pradesh, Verghese and Peter, 1970 in Kerala, Pillai and Peter, 1971 in Kerala and Nadkal et al., 1972 in Kerala, 65.7% by Matta and Ahluwalia, 1981 in Uttar Pradesh; 50.5 – 74.3% Saxen and Nama, 1976 in Rajasthan, 20-60 % by

babare et. al. 2001, from Maharastra, 27 -73% by Shinde L. V. et. al. 2004 from Maharastra.

Overall ecological survey of intestinal helminth of deshi chicken indicates maximum infection has been observed through out world. In our study above mention genera are observed from Gallus gallus domesticus of Bhokardan. Free range birds are not maintained properly, due to that they loose body weight and food quality. Hope this work help full us in biodiversity and conservation process.

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