

Original Article

Study of endo-parasitic infection in Fresh water fishes collected from Sina Kolegoan Dam District Osmanabad (M.S)

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ABSTRACT

The study was conducted to collect and identify endo-parasites of fresh water fishes from water bodies of Sina Kolegoan Dam in Dist. Osmanabad (M.S) and to determine the prevalence and intensity of infestation brought about by the endoparasites in the hosts. The host fishes were collected from fresh water Sina Kolegoan Dam. The prevalence of endo-parasites in the fresh water fishes was 30.38%. The intensities of infestation was 2.6. Five parasite species were found from *Masacembelus armatus* and *channagachua* fishes. The parasite groups were Cestodes (*Senga* sp., *Circumoncobothrium* sp.), trematodes (*Azygia* sp.) nematodes (*Procamallanus* sp.) were found in the fishes collected from Sina Kolegoan Dam. Liver, Air bladder, stomach, intestine and body cavity of the host fishes were examined for parasites. The intensity and the prevalence were higher in host fishes collected from Sina Kolegoan Dam host fishes.

Keywords:

Endo-parasites, Fresh water fishes, Sina Kolegoan Dam.

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DOI: [10.9780/23218045/1202013/49](https://doi.org/10.9780/23218045/1202013/49)**Introduction**

Sina kolegoan Dam is an irrigation project with storage on Sina River near village Rosa Ta. Paranda. Dist. Osmanabad. It has 10200 Ha irrigation areas, side of area like Paranda, Karmala and Anala. It has catchment area 5565.00 sq.km and having average rainfall 24.30 inches. The Gross annual utilization about 104.93.

Parasites are not different from any other form of life except for its unique nature of dependence on another free living host for its existence. The remarkable feature of parasite ecology is the close association with negative impact an individual maintains with another living organism with the result the host in many ways act as the environment for the parasite as stated by parasitologists Noble and Noble, 1976.

Parasitic diseases, either alone or in conjunction with other environmental stresses, may influence weight or reproduction of the host, alter its population characteristics, and affect its economic importance (Rhode 1993). Parasites occupy a definite position in the animal kingdom for their remarkable adaptations and damaging activities to host. The importance of parasite is related directly to the fish that may affect the general public health (Hoffman 1967).

Fisheries are important for the Indian economy as it provides employment opportunities, is a source of nutritional food and foreign exchange earning. The total fish production is 6.4 Million Metric Tonnes (mmt) of which 3.4 mmt is inland and 3.0 mmt is marine production but fish farming remains a high risk investment, mainly due to the disease problems caused by parasitic infections. Fishes are host to many adult helminth parasites and larval forms, the adult of which occur in amphibians, reptiles, birds and mammals as well as predatory fish. The strict dependence of the parasite on its host and the exploitation of the alter by the former provide a useful research model in the



field of ecology and evolutionary biology. Several investigations have studied helminth parasites of freshwater fishes. Immense infection enhance the rate of mortality therefore in order to avoid loss of economical, nutritional and medicinal value also to preserve endangered species of fishes. For that reason the present work was undertaken to investigate the prevalence and intensity of endoparasites of the fresh water fishes in Sina Kolegoan Dam Dist.Osmanabad (M.S).

Materials and Methods

The fishes were collected from different sites of Sina kolegoan Dam Dist.Osmanabad (MS) during year March 2012 to February 2013. Fishes were opened up dorso-ventrally and the internal organs examined. The entire digestive system was removed and placed in a Petri dish with physiological saline. Infection of each group of parasites was treated as follows: cestodes & trematode were fixed in Hot 4% formalin where as Nematodes were preserved in 10 % glycerol and cleared in lacto phenol. Borax carmine and Haematoxyline stains were used for trematode and cestodes. Keys of Yamaguti (1958), (1959), (1961) were used for the identification of helminths. Drawings are made with the aid of Camera Lucida.

To find all the prevalence and intensity of infection the calculations were made with the help of following formula.

Infected hosts

$$1) \text{ Prevalence of Infection} = \frac{\text{Total infected hosts}}{\text{Total hosts examined}} \times 100$$

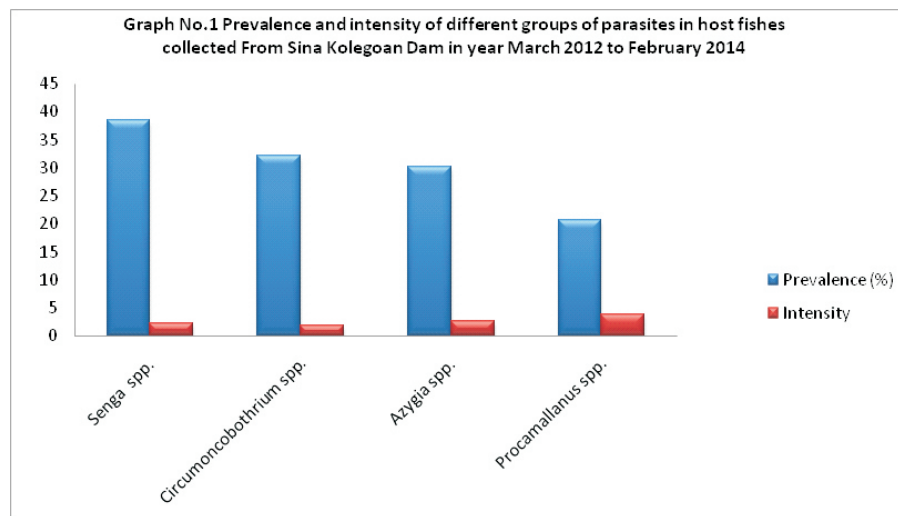
No. of collected sample

$$2) \text{ Intensity of Infection} = \frac{\text{Total no. of parasites}}{\text{No. of infected host}}$$

No. of infected host

Table 1: Prevalence and intensity of different groups of parasites in host fishes collected From Sina Kolegoan Dam in year March 2012 to February 2014

Sr. No	Name of parasites	Prevalence (%)	Intensity	Habitat
1	<i>Senga</i> spp.	38.44	2.3	Intestine
2	<i>Circumoncobothrium</i> spp.	32.24	1.9	Intestine
3	<i>Azygia</i> spp.	30.11	2.6	Stomach, Intestine
4	<i>Procamallanus</i> spp.	20.74	3.9	Intestine
	Total	30.38	2.6	



Results and Discussion

The data of prevalence and intensity of endo parasites of fresh water fishes from Sina kolegoan Dam Osmanabad district (M.S.) India during March 2012 to Feb, 2014. The prevalence or incidence of infection of four new species of tapeworms includes three genera i.e. *Circumoncobothrium* and *Senga* were calculated; one species of trematodes *Azygia anguisticauda* (Stafford 1904) Bhalerao, 1942 and one species of nematode i.e *Procamallanus hyderabadensis* S.M.Ali, 1956 were calculated.

The analysis of data showed that the occurrence of endo-parasites variable according to season. The maximum prevalence of endo-parasite recorded of *Senga* spp. (38.44%) followed by *Circumoncobothrium* spp. (32.24%) whereas low prevalence recorded of species *Azygia* spp.(30.11%) followed by *Procamallanus* spp.(20.74%) (Table No.1).Also maximum intensity was recorded of species *Procamallanus* spp (3.9) followed by *Azygia* spp (2.6) whereas minimum intensity recorded of species *Circumoncobothrium*spp (1.9) followed by *Senga* spp (2.3). Incidence of Cestode was found higher followed by trematodes and nematodes (Table No.1)

The above results were compared with many earlier workers as Anderson, R.M. (1976) who work done seasonal variation in the population dynamics of *Caryophyllaeus luticeps*, Dobson, A.P. (1985) studied the competition between the parasites, Thomas, J.D. (1964) worked on the population dynamics of digenetic trematode in vertebrates. Availability of food and feeding activity, distribution and environment of host, are influence the parasitic development. Kennedy, (1978) and Lawrence (1970). The parasites causes depletion of the nutritional contents in host's body and results in the low productivity, loss in fish industry (Hiware, 1999).

Thus the present study gives the idea of damage caused by these endo parasites (helminth parasites) to the fish economy. This study also adds some data regarding the taxonomy and diversity of parasites so that it will provide them preliminary literature to the researchers in the field of fish parasites.

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