



Prevalence of Cestodes in Fresh Water Fishes from Dhule region (M.S.), India

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ABSTRACT

The present investigation deals with the population dynamics of Cestode parasites infection in Fresh water fishes from Sonvad Dam, Dist. Dhule. Total 240 fresh water fish samples were collected during the month of October 2018 to September 2019. Total 76 cestode parasites were collected. The observed cestode parasites species includes *Senga* spp., and *Circumoncobothrium* spp.

KEYWORDS: Prevalence, Fresh water fishes, Cestode parasites, Sonvad Dam

INTRODUCTION

Fishes are the riches source of protein, minerals, oils and vitamins. For parasites development Fresh water Fish culture provides a large reservoir. Due to increase in World human population, environmental degradation, over harvesting of fish resources could no longer fulfill the food demand. Polluted water flourishes great parasitic infection to the fishes which are unfit for human consumption. Parasitic infection some time prove fatal and cause high mortality, when intermediate hosts support their life cycle. For many helminth parasites, fishes serve as definitive and intermediate hosts. Fish parasites affect health, growth, and survival of fish host. The investigation deals with studies on prevalence of cestode parasites in the freshwater fishes of Sonvad dam, Dhule region.

MATERIAL AND METHODS

For the study of Cestode parasites, fresh water fishes, *Clarias batrachus*, *Mastacembellus armatus* and *Chana striatus* were collected from Sonvad Dam near Songir village, Dist. Dhule throughout the years from October 2018 to September 2019.

The Cestode parasites were collected from the intestine and body cavity of the host. All cestodes were preserved in 4% formalin for taxonomical studies. The infected and non-infected host intestine observation was recorded. For further seasonal study the data was collected month wise in order to calculate the percentage of Incidence, Intensity and Density of infection seasonally i.e., summer, monsoon and winter of one year.

Formulae:

$$1. \text{ Incidence of infection} = \frac{B \times 100}{A}$$

$$2. \text{ Intensity of infection} = \frac{C}{B}$$

$$3. \text{ Density} = \frac{C}{\text{-----}}$$

A

$$4. \text{ Index} = \frac{B \times C}{A^2}$$

Where,

A = number of hosts examined

B = number of hosts infected

C = number of parasites collected

RESULTS

In Table No. 1, the present result shows high incidence of infection in summer and monsoon season and comparatively very low in winter season. The investigation was carried out with 240 Fresh water fishes in which *Clarias batrachus*, *Mastacembellus armatus* and *Channa striatus* was collected. Out of 240 Fresh water fishes, 59 fishes were found infected with cestode parasites during the period of October, 2017 to September, 2018. Cestodes of three genera i.e., *Circumoncobothrium* spp., and *Senga* spp. was recorded. In table No. 1 and, it shows the value in numerical form of incidence, intensity, density and index of infection of cestode parasites.

TABLE: 1 – Table shows recorded data of Cestode from October, 2018 to September, 2019 from Sonvad Dam

Month and Year	No. of Host Examined A	No. of Host Infected B	No. of Cestode collected C	Incidence of infection (%) (B x 100/A)	Intensity of infection (%) (C/B)	Density of infection (%) (C/A)	Index of infection (B x C/A ²)
Oct., 2018	20	04	04	20	1.00	0.20	0.04
Nov., 2018	20	03	02	15	0.66	0.10	0.01
Dec., 2018	20	04	02	20	0.50	0.10	0.02
Jan., 2019	20	04	06	20	1.50	0.30	0.06
Feb., 2019	20	05	08	25	1.60	0.40	0.10
March, 2019	20	04	10	40	2.50	0.50	0.10
April, 2019	20	05	12	35	2.40	0.60	0.15
May, 2019	20	06	09	30	1.50	0.50	0.13
June, 2019	20	06	06	30	1.00	0.30	0.09
July, 2019	20	04	06	20	1.50	0.30	0.06
Aug., 2019	20	05	05	30	1.00	0.25	0.06
Sept., 2019	20	05	06	20	1.20	0.30	0.07
Total	240	59	76				

DISCUSSION

The present investigation, reveals high intensity, density and index of infection of cestode parasites in summer, moderate in monsoon and very low in winter season (Figure No. 2 & Table No. 2). Similar results and seasonal influence on the cestode parasites were reported by Hiware, 2010, Dhole et. al., 2010, Jadhav et al., 2011, Deshmukh et al., 2013, Borde et.al., 2012, Kaur et al., 2012, Rumeet Kaur et. al., 2012 and Suryawanshi, 2021.

High temperature and sufficient moisture are the essential requirement for the development of parasites. It has been noticed that around water bodies, pesticides from agricultural land are continuously added may directly or indirectly affecting the production of fishes.

Figure :-1 Recorded Data of Cestode Parasites from Oct-2018 to September 2019 from Sonvad Dam

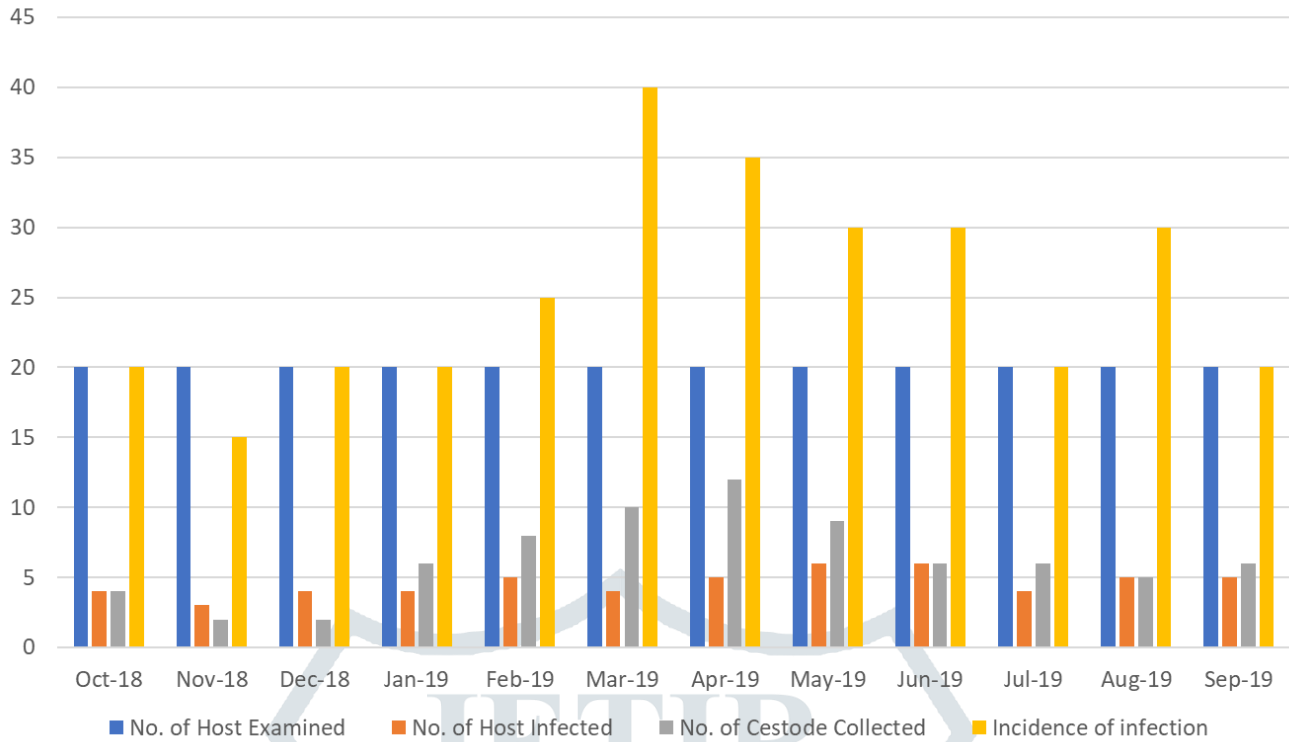
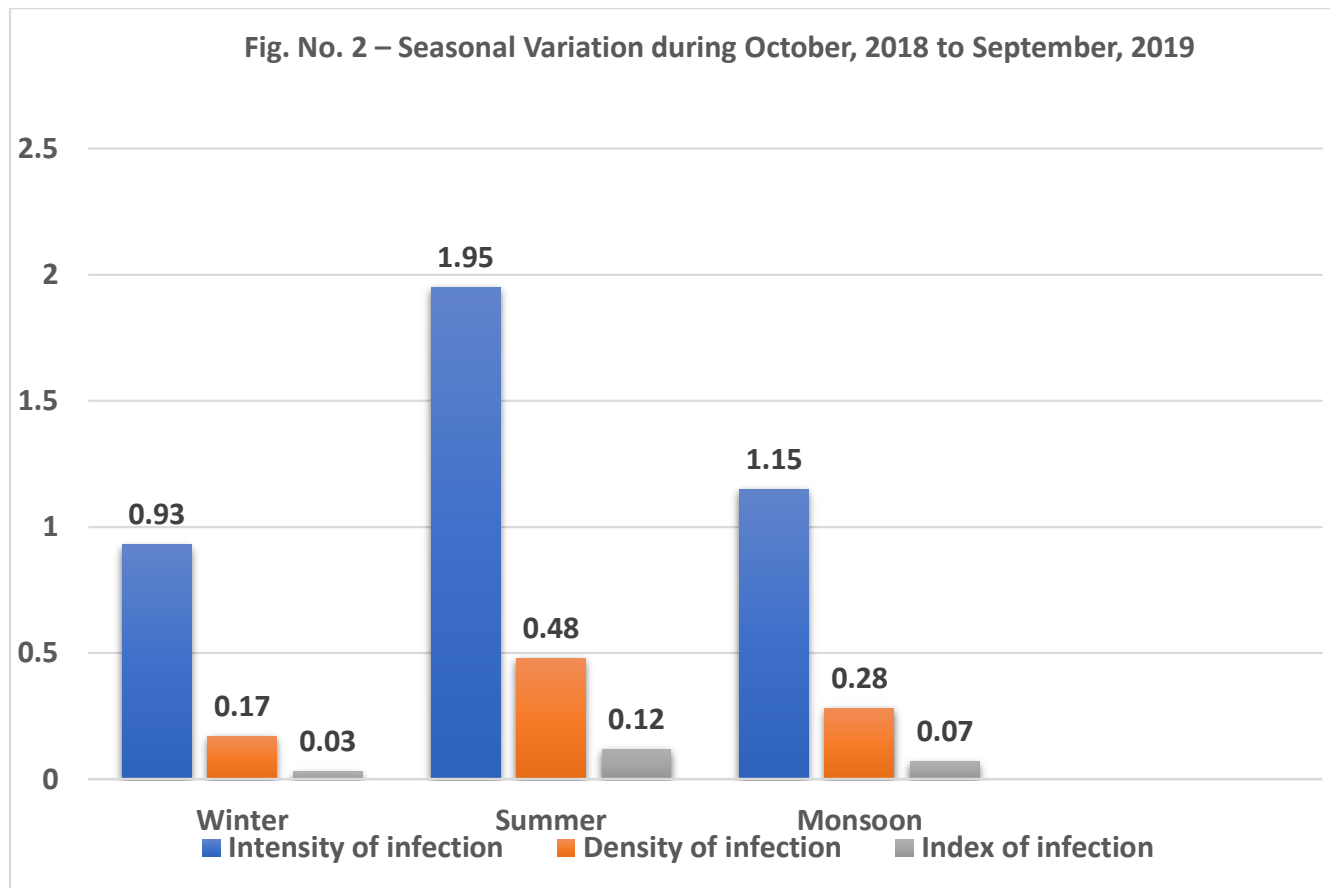


Table 2: - Table showing seasonal variation of Incidence, Intensity & Density of infection during October, 2018 to September, 2019

Sr. No.	Season	No. of Intestine examined 'A'	No. of infected Intestine 'B'	No. of Cestode collected 'C'	Incidence of Infection (%)	Intensity of Infection (%)	Density of Infection (%)	Index of Infection (%)
1	Winter	80	15	14	18.75	0.93	0.17	0.03
2	Summer	80	20	39	25	1.95	0.48	0.12
3	Monsoon	80	20	23	25	1.15	0.28	0.07



The present investigation shows that occurrence of cestode infection was host specific due to morphological, physiological and ecological factors affect the host specificity. The morphological factor in which site of attachment of parasite to the host (Agrawal,2006). The ecological factors mean environment and distribution of host and mode of feeding and diet is the physiological factors (Kennedy, 1976). Jadhav and Bhure (2006), explained the distribution of parasites are host specific.

Thus, such type of results shows that how the environmental factor and feeding habitat influenced the parasitic seasonal infection to the host.

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