



INVESTIGATION OF DENSITY OF CESTODE PARASITES INFECTION IN FRESH WATER FISHES DURING FEBRUARY 2015 TO JANUARY 2017 FROM UJANI RESERVOIR, MAHARASHTRA STATE, INDIA.

A. S. Raipalli*, S. S. Raipalli

Department of Zoology, Shankarrao Mohite Mahavidyalaya, Akluj, Dist. Solapur, Maharashtra, India

ABSTRACT :

In the present investigation the density of cestode parasites *Lytocestus*, *Circumoncobothrium*, *Senga* and *Gangesia sp.* from freshwater fishes *Clarias batrachus*, *Mastacembelus armatus*, *Channa gachua* and *Wallago attu* during February 2015 to January 2017 from Ujani reservoir, Maharashtra state, India was studied. Fish all over the world suffer from varieties of parasitic diseases that cause mortality in fish either directly or indirectly (Lerssutthi chawal, 1999). Especially, the cestode parasites of fish which live in the alimentary canal damage the lining wall of the gut and some other organs such as liver and bile duct. Therefore, considering the adverse effect of parasitic contamination on fish health, the present study was planned to collect the data on seasonal variations.

KEYWORDS :

Investigation, Density, Cestode parasite, *Lytocestus*, *Circumoncobothrium*, *Senga* and *Gangesia sp.*, freshwater fish *Clarias batrachus*, *Mastacembelus armatus*, *Channa gachua*, *Wallago attu*, Ujani reservoir.

I. INTRODUCTION

Fish form an important dietary component of man. Since, it is important the fish that are consumed should be healthy and free of infection ensuring food safety. Infections which are caused by viruses, bacteria and parasites among fishes in natural and manmade culture systems are harmful for fish health and growth and sometimes are very fatal, causing high mortalities. The parasitic activities cause injuries to their tissues which then become infected by the secondary activity of microorganisms (Khanum *et al.*, 2008). Besides mortality in fish, some Cestode parasites are also transmitted to humans through fish. According to Ahmed

(1994), the density of the parasitic activity increases when an intermediate host is involved in their life cycle. This is the reason why Cestode parasites cause greater damage to the fish. These parasites either cause diseases in fish directly or make them susceptible to other disease. Both the cases result in the fish loss (Onyedineke *et al.*, 2010). In tropical countries like India where there is increasing protein demand fishes acts as a cheap source of animal protein. It is known for its protein value, high content of essential minerals and for being low in saturated fats. Hence to obtain healthy and quality fish meat, it is necessary that the fish should be free from all types of pathogens. Parasites of fish constitute one of the major problems to fish health. In order to control parasitic infestation of fresh water fishes much emphasis needs to be given on epidemiological studies so that preventive measures can be taken.

Therefore, the present study was undertaken to investigate the density of infestation of cestode parasites in Fresh water fishes during February 2015 to January 2017 from Ujani reservoir, Maharashtra state, India.

II. MATERIAL AND METHOD

The Ujani dam is constructed on the Bhima River near the village Ujani, MadhaTahasil of Solapur district in Maharashtra state. The river Bhima is a major tributary of the Krishna River. The study sites of the present investigation viz. Indapur, Palasdev and Bhigwan are located in the backwater of Ujani Reservoir about 50 kms upstream of the dam. The spread of the Ujani reservoir occupies the North of the dam site to the South lie hill slope and agricultural lands of two villages, Kumbhargao and Dalaj No. 2. Both these villages have been resettled on the new sites due to the construction of Ujani reservoir.

The investigation was carried out during the study period of Feb 2015 to Jan 2017, at Ujani reservoir. The hosts examined in two years, were *Mastacembelus armatus*, *Clarias batrachus*, *Channa gachua* and *Wallago attu*. The Fish hosts were dissected in the laboratory. The intestines were examined and recorded the data of infected intestine. After separating and counting the population of cestode parasites from different hosts, the parasites were preserved in 4% formaline in separate bottles.

The density of infection are calculated by using standard formulae as follows: (Jadhav and Bhure, 2006):

Density of infection – Density of infection is calculated by using following formula:

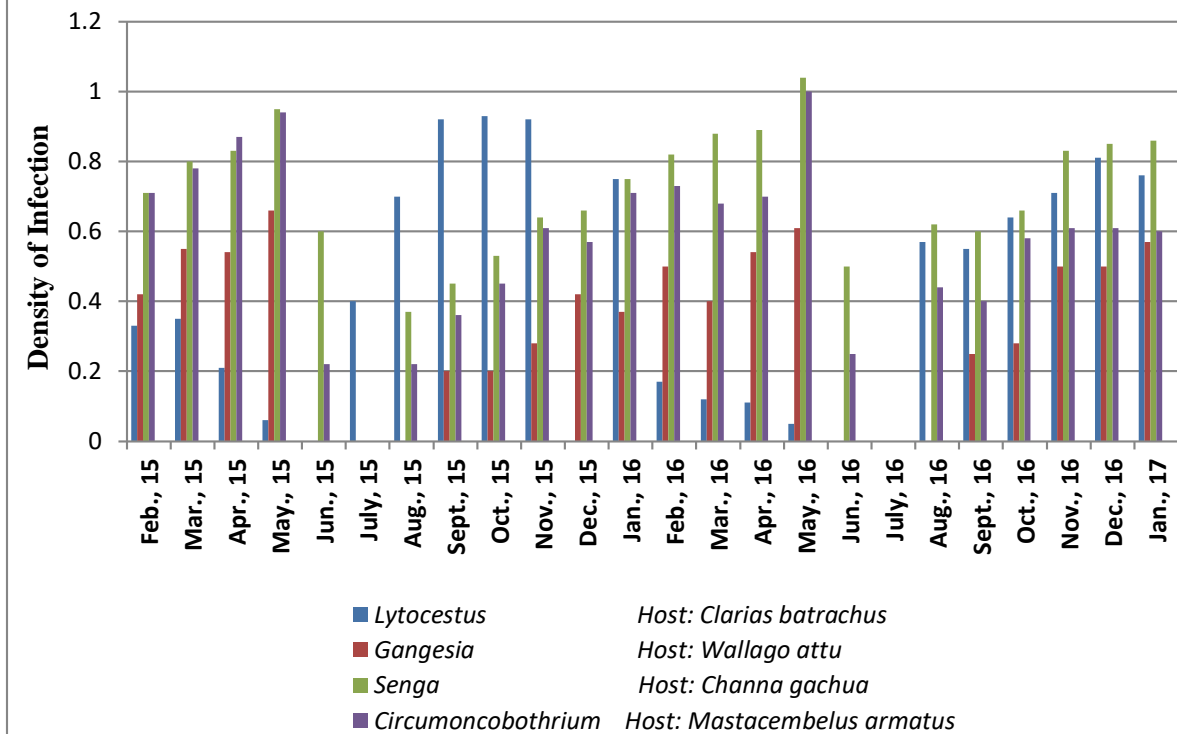
$$\text{Density of infection} = \frac{\text{No. of parasites collected (c)}}{\text{No. of hosts examined (a)}}$$

III. RESULTS AND DISCUSSION

Table : Density of Cestode parasites infection in Fresh water fishes during February 2015 to January 2017 from Ujani reservoir, Maharashtra state, India.

Month	Lytocestus Sp.			Gangesia Sp.			Senga Sp.			Circumonchobotrium Sp.		
	No. of host examined (a)	No. of Parasites (b)	Density % b/a	No. of host examined (a)	No. of Parasites (b)	Density % b/a	No. of host examined (a)	No. of Parasites (b)	Density % b/a	No. of host examined (a)	No. of Parasites (b)	Density % b/a
Feb., 15	15	05	0.33	07	03	0.42	14	10	0.71	14	10	0.71
Mar., 15	14	05	0.35	09	05	0.55	15	12	0.66	14	11	0.78
Apr., 15	14	04	0.21	11	06	0.54	18	15	0.83	16	14	0.87
May., 15	15	01	0.06	12	08	0.66	20	19	0.95	17	16	0.94
Jun., 15	08	00	0.00	02	-	-	05	03	0.60	09	02	0.22
July, 15	10	04	0.40	-	-	-	-	-	-	-	-	-
Aug., 15	10	07	0.70	03	-	-	08	03	0.37	09	02	0.22
Sept., 15	13	12	0.92	05	01	0.20	11	05	0.45	11	04	0.36
Oct., 15	15	14	0.93	05	01	0.20	13	07	0.53	11	05	0.45
Nov., 15	14	13	0.92	07	02	0.28	14	09	0.64	13	08	0.61
Dec., 15	-	-	-	07	03	0.42	15	10	0.66	14	08	0.57
Jan., 16	16	12	0.75	08	03	0.37	16	12	0.75	14	10	0.71
Feb., 16	17	03	0.17	08	04	0.50	17	14	0.82	15	11	0.73
Mar., 16	16	02	0.12	10	04	0.40	17	15	0.88	16	11	0.68
Apr., 16	18	02	0.11	11	06	0.54	19	17	0.89	17	12	0.70
May., 16	18	01	0.05	13	08	0.61	21	22	1.04	19	19	1.00
Jun., 16	05	00	0.00	02	-	-	08	04	0.50	08	02	0.25
July, 16	-	-	-	-	-	-	-	-	-	-	-	-
Aug., 16	07	04	0.57	02	-	-	08	05	0.62	09	04	0.44
Sept., 16	09	05	0.55	04	01	0.25	10	06	0.60	10	04	0.40
Oct., 16	14	09	0.64	07	02	0.28	12	08	0.66	12	07	0.58
Nov., 16	14	10	0.71	06	03	0.50	12	10	0.83	13	08	0.61
Dec., 16	16	13	0.81	06	03	0.50	14	12	0.85	13	08	0.61
Jan., 17	17	13	0.76	07	04	0.57	15	13	0.86	15	09	0.60

Fig : Showing the Density of Cestode parasites infection in fresh water fishes during Feb 2015-Jan 2017 from "Ujani reservoir"



The analysis of data showed that the occurrence of cestode parasites varies according to seasons. The high density of infection of all cestode parasites was observed in summer season followed by winter season whereas lower in monsoon season, except *Lytocestus*. According to Kennedy (1971, 1975 and 1977) and Rodhe (1993) factors such as the temp, humidity, rainfall, feeding habits of host, availability of infective host and parasite maturation are responsible for influencing the parasitic infections.

IV. ACKNOWLEDGEMENT

The authors are thankful to the Head Dept. of Zoology, Shankarrao Mohite Mahavidyalaya, Akluj, Dist. Solapur, (M. S.) India for providing necessary laboratory and library facilities during tenure of this work.

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