

Presence of Digenetic Trematode Parasites of Cypriniformes Fish *Labeo rohita*

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Abstract: The digenetic trematode parasites are found in the body of fresh water fishes. They carry infectious agents in their body. They cause deterioration in their internal body parts. Which affect the growth, sexual, maturity, mortality, and immunity of fishes. Fishes are also serves as vector of some diseases in human beings and animals. Gomti River is one of the important habitat for the fishes in Jaunpur. A total no. of 236 specimens was taken in which 84 were infected.

Keywords: Digenetic trematode parasites & *Labeo rohita*

1. Introduction

Fishes are good source of proteinous food for animals and humans. When infectious agents cause deterioration in their body then their mortality rate unbalances their ecosystem. These parasites use the fish for their shelter and food and destruct more or less each and every organs resulting in pathogenic effects (Lilley et al. 1992). Fishes feeds on insects, crustaceans, mollusks and plants. Food helps in carrying the infectious agents in the body of fishes followed humans and animals. Relationship between sex and parasite intensity in fourfresh water species (Rahman et al. 2011).Community of helminth parasites in *Rita rita* (Khanum et al. 2008).Prevalence of parasites in Indian major carp, *Labeo rohita* (Farhaduzzaman et al. 2010).Length and weight of Indian major carp in relation to growth parameters have been studied by Ahmed et al (1996), Saxena et al (2009).Biology and fisheries of Indian major carp (Jain, 2000).The influence of parasites in relation to the length of fish has been described by many workers Jha and Sinha(1990), Shomorendra et al. (2005, 2007).Bhuiyan et al.(2007), Banu et al.(1993), Chandra et al.(1997) worked on seasonal variation in the population of a single helminth parasites associated with a particular host fish. Distribution of helminth parasites in different size group and organs of fish (D' Silva 2012).prevalence of parasitic infection in the fresh water fishes (Sarmin et al.2018). Studies on digenetic trematode parasites in fresh water carnivorous fishes of Jaunpur (Singh et al. 2018). Many parasites found

abundantly in the habitat of River Gomti in Jaunpur(Uttar Pradesh).

2. Materials and Methods

We took the samples from Gomti River (25.7490⁰N, 82.6987⁰E) in Jaunpur during the time period between (1st July -2017 to 30 June-2018).We took the samples from the different sites of River Gomti (Ram Ghat, Baluwa ghat, Sooraj Ghat) .Living specimens were shifted to the laboratory to examine their different parts. First we opened the alimentary pipe in a saline water and washed many times. Now we examine the intestine and its content under the microscope. Digenetic trematodes were collected in a test tube filled with 70% ethnlol for 24 to 48 hours then counted it. All parasites were stained in aceto-alum carmine, dehydrates in different grads of alcohol and mounted in Canada balsam, then camera lucida diagram, identified by Systema Helminthum (Yamaguti 1954) book. To the determination of population dynamics by Margolis et al.(1982).

3. Results

Total no. of 263 specimens we examined for our work of *Labeo rohita*. In which 84 were infected. Total no. of 143 parasites was recovered. Different aspects are shown in the following tables:

Table 1: Monthly variations of different ecological aspects in *Labeo rohita*

Month	No. of Host Examined	No. of Host Infected	No. of Parasites	Prevalence%	Abundance	Mean Intensity	Dominant %
JUL	28	3	4	10.71	0.14	1.33	2.79
AUG	16	6	8	37.50	0.50	1.33	5.59
SEP	19	5	12	26.31	0.63	2.40	8.39
OCT	15	4	9	26.66	0.60	2.25	6.29
NOV	18	11	27	61.12	0.94	1.54	11.88
DEC	21	9	13	42.84	0.61	1.44	9.09
JAN	25	14	19	56	0.76	1.35	13.28
FEB	21	4	9	19.04	0.42	2.25	6.29
MAR	18	7	16	38.89	0.88	2.28	11.18
APR	17	5	8	29.41	0.47	1.60	5.59
MAY	20	6	9	30	0.45	1.50	6.29
JUN	18	10	19	55.56	1.05	1.90	13.28

Table 2: Seasonal variations of different ecological aspects in *Labeo rohita*

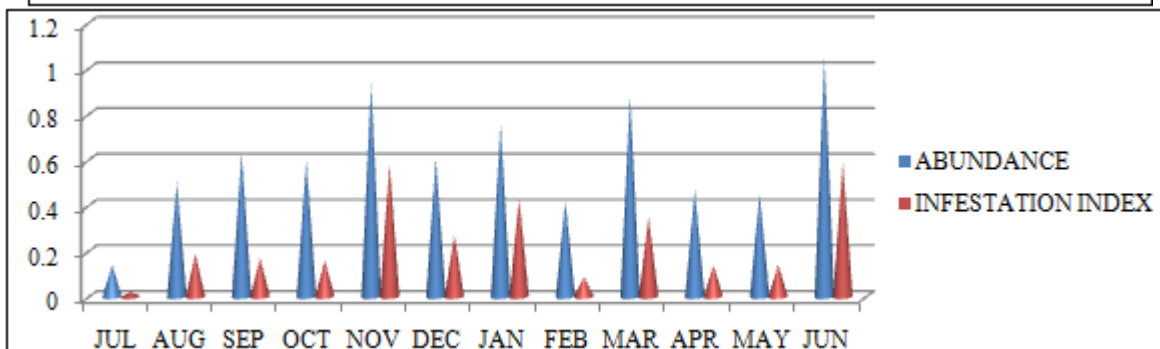
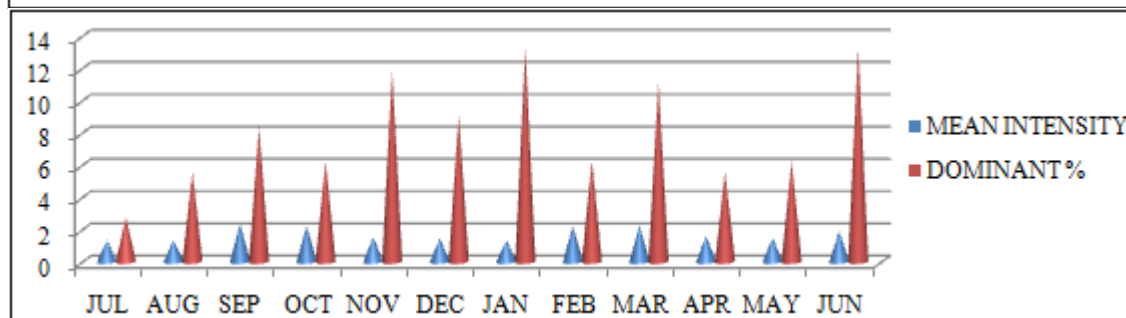
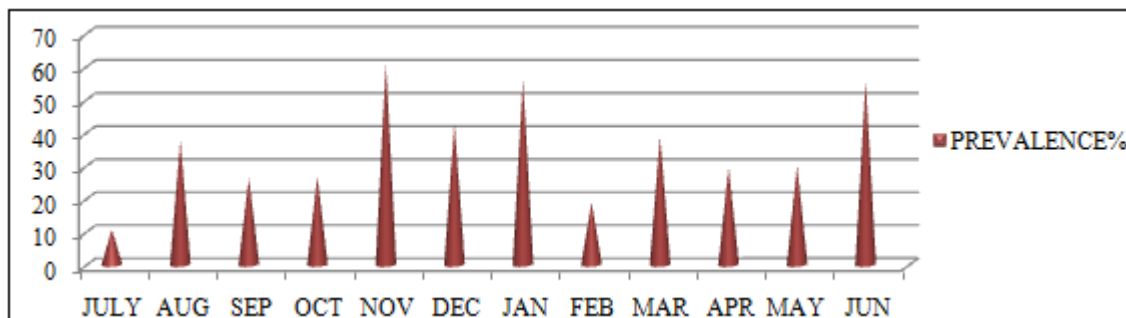
Seasons	No. of Host Examined	No. of Host Infected	No. of Parasites	Prevalence%	Abundance	Mean Intensity	Dominant %
Rainy	78	18	33	23.07	0.42	1.83	23.07
Winter	85	38	58	44.70	0.68	1.52	40.55
Summer	73	28	52	38.35	0.71	1.85	36.36

Table 3: Monthly infestation index (I.I.) value of *Labeo rohita*

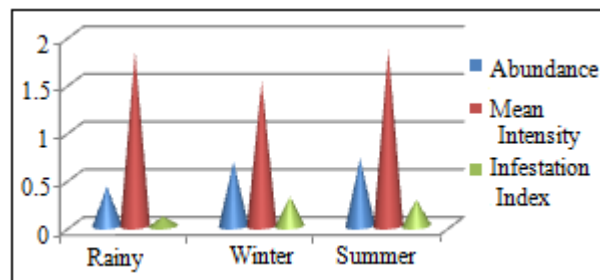
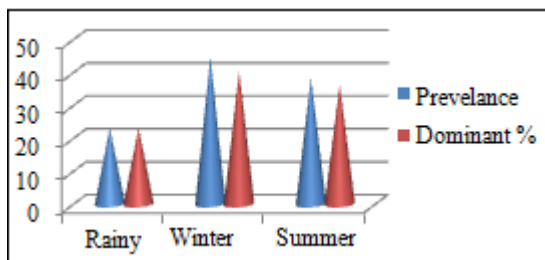
MON	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
I.I.	0.02	0.19	0.17	0.16	0.58	0.27	0.43	0.09	0.35	0.14	0.14	0.59

Table 4: Seasonal infestation index (I.I.) value of *Labeo rohita*

Seasons	Rainy	Winter	Summer
Infestation			
Index Value	0.10	0.31	0.28



Graph (Table No. 1&3)



Graph (Table No. 2&4)

Monthly and seasonal variations are shown in the graph with the help of ecological parameters

4. Conclusion

From our tables we conclude that the amount of infection varies with the change of seasons. Winter season is good for parasites development. They affect the food value of fishes so it is important for us to use different preventing measures. We also aware the people about the infections and fishes which they consume. By which we save fishes maximum from infections.

References

- [1] **A. M.F arhaduzzaman, M.Manjurul Alam, Mosharrof Hossain, M. Afzal Hussain, Md. Habibur Rahman (2010):**Prevalence of parasites in Indian major carp, Labeo rohita (Ham.)Rajshahi, Bangladesh. Uni. J.Zool.Rajshahi Uni., 28:65-68.
- [2] **Ahmed A.K., Tawfif M.A.A., Abbas W.T.(2000)** :Some parasitic protozoa infecting fish from different localities of the River Nile, Egypt.Egypt J.Zool 34, 59-79.
- [3] **Banu A.N.H., Hossain M. A, Khan, M.H(1993):**. Investigation into the occurrence of parasites in carps, catfish and tilapia.Prog Agric.1993;4:11-16.
- [4] **Bhuiyan AS, Akther S, Musa G.M.(2007):** Occurance of parasites in Labio rohita (Ham.) from Rajshahi.Unis. J.Zool.Rajshahi Uni.2007;26:31-34.
- [5] **Chandra KJ, Islam KJ, Wotten R.(1997):**Some aspect of association and development of Lytocestus indicus Moghe catfish Clarias batrachus.Bangladesh J Fish Res.1997;1:31-38 .
- [6] **D' Silva J., Bhuiyan A.I. and Bristow G.A.(2012):**. Distribution of helminth parasites in size group and organs of Hilsa shad, Tenulosa ilisa.Dhaka Uni.J.Biol.Sci, 21(1), 55-65(2012).
- [7] **Jha A.N., Sinha P.(1990):**The occurrence of helminth parasites in relation to the size of fish .Bio J.1990;2(11):311-316.
- [8] **Jain .M.K.(2000):**Biology and fisheries of Indian major carps from Siliserh reservoir Alwar, Rajasthan .Ph.D. thesis, M.P.U. of Agriculture and Technology, Udaipur.
- [9] **Khanum Hamida, Ferdows Jakia, Rimi Farhana(2008).**community of helmin parasites in Rita rita(Ham.Buchmann) J Bio Sci.2008;16:133-135.
- [10] **Lilley, J.H., Philips, M.J., Tonguthai, K., (1992);**A review of epizoonotic ulcerative syndrome (EUS) in Asis.Publ.Aquatic Animal Research Institute and Network of Aquaculture Center in Asia-Pacific, Bangkok, Thailand, p.73.
- [11] **Margolis, L., G.W.Esch, J.C.Holmes, A.M.KURIS, and G. A. Schad (1982);** The use of ecological terms in parasitology (report of an ad hoc committee of the American Society of parasitologists).J.Parasit.68:131-133 .
- [12] **Rahman, WA. And Saindin, H.(2011):**Relationship between sex and parasite intensity in fourfresh water fish species from Tasik Merah, Perak, Peninsular Malaysia.
- [13] **Shomorendra M, Jha AN, Kumar P(2005):**Seasonal occurrence of helminth parasites in fishes of Loktak lake, Manipur. Uttar Pradesh J Zool.2005;25(1):23-27.
- [14] **Shomorendra M, Jha AN, Kumar P(2007):**.Effect of length of fish on the occurrence of helminth parasites .Uttar Pradesh J Zool.2007;27(1):87-91. .
- [15] **Saxena, M., And Saxena, D N.(2009):**Length –weight relationship of Indian major carps and a Chinese carp in a polyculture pond at government fish form, Gwalior (M.P.).The Bioscan ., 4(3), pp.413-419.
- [16] **Sarmin Akther, Emrul Hakkani, Ashadyzzaman and Moni Krishna Mohanta(2018):**Prevalence of parasitic infections in the fresh water fish *Channa punctatus* (Bloch) from Rajshahi Metropolitan., Bangladesh. Int.J.Curr.Microbiol.App.Sci.(2018)7(4):3431-3441.
- [17] **Singh Prashant, Mishra D.B., and Singh H.S., (2018):** Studies on digenetic trematode parasites in fresh water carnivorous fishes of jaunpur .Int.J. of Science and Research(2018)7. (10):2319-7064.
- [18] **Yamaguti S.(1958):**Systemahelminthum vol.1. The digenetic trematodes of vertebrates. Int.Sci.pub. NewYork 1575.

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