

Comparative Study of Helminthiasis in Fresh Water Fishes of Darbhanga Region, Bihar

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Abstract: *Channa punctatus* is the most significant freshwater fish with high healthy benefit and market request due to its generally minimal effort and high accessibility in the fish showcase. In any case, because of parasitic contamination present danger to angle development, which is a significant wellspring of sustenance and work. In the present examination, 40 fishes of *Channa punctatus* (Bloch) were gathered from various fish market of Darbhanga Locale, Bihar. Live new examples of *Channa punctatus* (Bloch) all things considered and sex were gathered to watch the helminth parasites. Trematodes, Cestodes, Nematodes and Acanthocephalans are a noteworthy gathering of helminth parasites which caused contaminations or infections. Female fish were exceptionally contaminated than the male. In connection to the size bigger size of fish, *Channa punctatus* were exceptionally contaminated.

Keywords: contaminated, helminth, Trematodes, Cestodes

1. Introduction

Fishes are significant wellspring of protein for human. Since human uses angles as a nourishment, it is significant that they ought to be sound and free of disease. India is the third biggest maker of fish on the planet and second in inland fish creation (FAO, 2001). Fishes are most significant for the Indian economy as it gives work opportunity, is a wellspring of procuring. In any case, because of maladies brought about by parasites, fish refined remain a high hazard venture. The fish parasites have likewise been implied as zoonotic and organic risk in imminent of human wellbeing (Chaia, 2005). The real gathering of parasites in freshwater fishes is trematodes, cestodes, nematodes and acanthocephalans which cause disease. Other than these, there are various parasites which are transmitted to people just through fish (Gupta, 1959). These parasites decline the rate of development just as the proliferation rate of the fish, bringing about loss of potential nourishment furthermore, monetary misfortune to the culturist. Jha et al. (1992) contemplated the regular event of an aggregate of 11 types of helminths from 4 types of freshwater fish, for example *Channa punctatus*, *Heteropneustes fossilis*, *Colisa fasciatus* and *Puntius sophore* at the Sikandarpur repository, Muzaffarpur, Bihar, India. Alam et al. (2015) examined the impact of diplostomum disease on crisp water fish *Heteropneustes fossilis* in Darbhanga, Bihar, a worldwide issue. For effective counteractive action and disposal of such disease, it is critical to accomplish early and right determination of the larval phase of the parasites. Keeping in view, the present examination was intended to research the weight and impact of helminth parasites in freshwater angles *Channa punctatus* (Bloch) of Darbhanga District, Bihar.

2. Materials and Methods

2.1 Collection of fishes and study area:

An examination was made on *Channa punctatus* (Bloch) from the diverse neighborhood fish market of Darbhanga District, Bihar State, India, amid January – May (2019). Live host or naturally dead examples were arbitrarily tested and brought into the research facility in a plastic pack with some measure of water.

2.2 Methodology

The estimation of length was finished by centimeter scale and genders were controlled by the perception of gonad. Fishes were dismembered so as to gather all helminth parasites. All organs were expelled from the host fish and kept in a petri dish with saline. Organs were analyzed for parasites in a different petri dishes by utilizing a hand focal point. The connected parasites were expelled cautiously with the assistance a brush. The gathered parasites were washed in new water to expel any flotsam and jetsam before making any slides. The Trematodes were fixed in hot 10% formalin, cestodes and acanthocephala were fixed in AFA arrangement. The parasites were recolored with borax carmine, got dried out in various evaluations of ethanol, cleared in xylene and after the finish of recoloring process the parasites were mounted with DPX. Gathered parasites were distinguished by utilizing a compound magnifying lens (Aloo et al. 2004, Yamaguchi 1963, Soota 1983). The predominance, wealth, mean thickness and Index of disease of parasites were evaluated by Margolis.

3. Result and Discussion

In the present examination, the acquired outcomes are portrayed in table what's more, figure. Absolute no. of 40 examples of freshwater fish, *Channa punctatus* were inspected for the nearness of helminth parasites.

3.1 Relation between host (*Channa punctatus*) sex and parasitic infection

To watch parasitic disease in fish, *Channa punctatus* were gathered from the neighborhood fish market of Darbhanga, Bihar. Out of absolute 40 angles, 24 fishes were female and 16 fishes were male. The all out fishes were analyzed, 7 were contaminated out of 24 females and 3 were contaminated out of 16 guys. Amid this examination period pervasiveness of the parasitic disease (%) in the female what's more, male was (29.16%) and (18.75) separately. Bounty, mean thickness and file of disease in female was 0.8,3 and 6.1 and in male 0.4,

2.3, and 1.3 separately (Table1 figure1). In the present examination, it was seen that the female *Channa punctatus* were more tainted than the male. Thomas (1964) Chandra (1985) Khanum and Parveen (1997) and Rahman and Saidin (2011) comparatively watched and presumed that it might be because of lower physiological obstruction of female fishes as contrasted with the guys. As indicated by Aloo et al. (2004) the fundamental purpose behind the distinctions in parasite load by sex is physiological.

Table 1: Prevalence, mean intensity and abundance of parasitic infestation *C. punctatus* in different sex groups

Sex	No. of fish examined	No. of infected fish	No. of parasites	Prevalence (%)	Abundance	Mean density	Index of infection
Female	24	7	21	29.16	0.87	3	6.12
Male	16	3	7	18.75	0.43	2.3	1.31
Total	40	10	28	47.91	1.3	5.3	7.43

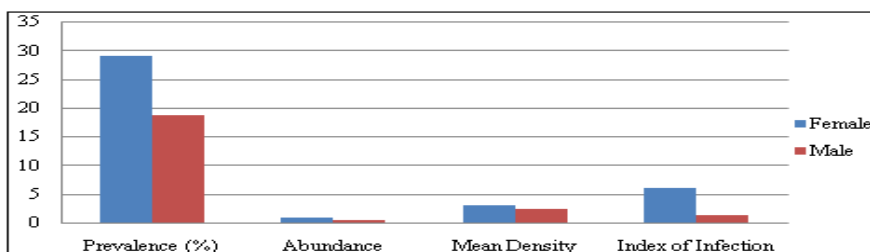


Figure 1: Parasitic infection in *Channa punctatus* in the Relation between sex and different indices

3.2 Relation between host (*channa punctatus*) size (length) and parasitic infection

In this examination, it was likewise explored what length of *channa punctatus* more tainted than the others. Length gatherings have been isolated into three gatherings 11-14.9, 15-18.9 and 19-22.9(cm). The Prevalence (%) of helminth parasites was most noteworthy (half) in huge size, length gathering (19-22.9 cm) and most reduced in the little size length gathering (11-14.9 cm) of fishes. It seen that the bigger size of *channa punctatus* was exceptionally tainted

with helminth parasites in contrast with the little size of the fish. A Similar report was additionally seen by Kaur et al. (2012) that, the huge fishes were all the more intensely tainted than the littler fishes. Kennedy et al. (1986) expressed that an expanding host size is connected with an expansion in accessible specialties for colonization and in this way parasite lavishness. Singh and Mishra (2016) expressed that an expansion in the span of fish have was went with an expansion in parasitic disease.

Table 2: Prevalence, mean intensity and abundance of parasitic infestation *C. punctatus* in different length groups

Length groups (cm)	No. of fish examined	No. of infected fish	No. of parasites	Prevalence (%)	Abundance	Mean density	Index of infection
11-14.9	26	5	19	19.3	0.73	3.8	3.6
15-18.9	12	1	8	33.3	0.66	2	2.6
19-22.9	2	4	1	50	0.5	1	0.5
Total	40	10	28	102.6	1.83	6.8	6.7

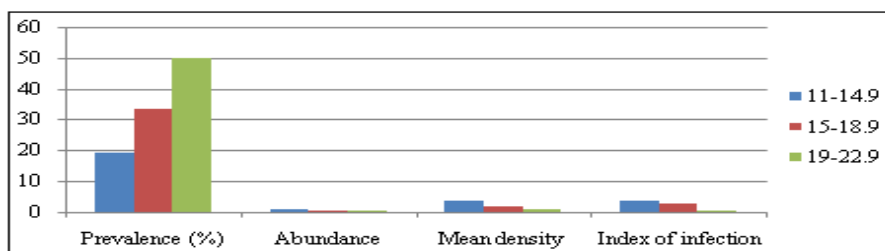


Figure 2: Parasitic infection in *C. punctatus* in Relation between standard length and different indices

4. Conclusion

This investigation depicts the disease of helminth parasites in freshwater fish and it demonstrates that disease of helminth parasites in *Channa punctatus* fluctuated with sex and size. The fish extend 19-22.9 (cm) was exceptionally tainted with

parasites. Female fishes were more contaminated than the male fishes. Along these lines, Sex of *Channa punctatus* assume a significant job in the number of parasites tainting the fish. It could be because of water quality, profundity of water, temperature of water and other Physiochemical parameters.

5. Future Scope

Channa punctatus is a typical fish with high healthy benefit. It has a superior financial significance since it is utilized as nourishment. The issue which caused parasites is the long span of development, weight decrease and absence of tastefulness. By the by, more investigation or research is should have been conveyed out for the parasites of *Channa punctatus*.

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