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INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY EDUCATIONAL RESEARCH
ISSN:2277-7881(Print); IMPACT FACTOR :10.16(2026); IC VALUE:5.16; ISI VALUE:2.286
PEER REVIEWED AND REFEREED INTERNATIONAL JOURNAL
(Fulfilled Suggests Parameters of UGC by IJMER)
Volume:15, Issue:2(6), February 2026
Scopus Review ID: A2B96D3ACF3FEA2A
Article Received: Reviewed: Accepted
Publisher: Sucharitha Publication, India
Online Copy of Article Publication Available: www.ijmer.in

# A STUDY ON GASTROINTESTINAL HELMINTH PARASITE OF FRESH WATER FISH (CHANNA STRIATUS)

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**Abstract:**

In the present investigation an attempt has been made to study the parasitic infestation in the host species, the snake head fish, Channa striatus and the parasites recorded was acanthocephalans, thorny headed worm. The prevalence, abundance and mean intensity was studied in different groups. It was observed that the prevalence, abundance and mean intensity in different group were varied.The variation in infection levels may be attributed to differences in environmental conditions, feeding habits, and availability of intermediate hosts. The findings of this study provide valuable insights into host–parasite interactions and contribute to understanding the health status of the fish population.

## Introduction

India is considered to be the second largest producer of fish, which employes over 7 million people in fish culturing and production. Some of the main major carps of fresh water in India are catla catla, labeo rohita, cirrhinus mirgala, channa striatus, channa punctatus. As the demand for fish culturing and production has increases, it has also been noted that this fishes are manifested by growing species of parasites.. Disease causing endoparasites are like nematodes, protozoans, platyhelminths, acanthocephalans, flat worms. In order to survive these parasites undergo certain parasitic adaptations, through morphological changes like natural formation of organs like hooks, clasping organs, spines, suction disc for attachment along with physiological adaptations in order to survive bodily fluids and intestinal juices as they are gastrointestinal parasites . Nematodes and acanthocephalans are responsible for causing heavy infections in host by attacking every tissue. Kennedy in (1995) stated that there are certain biotic and abiotic factors affect the parasite infestation, it could be gastrointestinal or external surface. Poulin (2000) reported that, in a fish the parasitic infection increases with increase in the host size and age. Also stated that older fish accumulate more parasites than the younger ones with more internal and external space. Takemoto and pavanelli (2000) stated that during the fish development many changes occur in their behavior and biology based on their diet and habitat in which they thrive. These changes will influence parasitic population. Dogiel ( 1961) stated that diet plays an important role in composition of parasitic population in the host gut. In the subtropical and tropical fresh water fishes the richest helminth fauna was found due to their mixed carnivorous diets. Reimchem and nosil (2001) pointed that are experimental and field evidence that males are more heavily infected than females. Bagge (2004) stated that there are certain environmental characteristics like physical or chemical may affect the establishment in the host population.

## MATERIALS AND METHOD:

In the present study the fresh water channa striatus (snake head murrel) was considered to isolate the intestinal parasite. The fish was collected from begum bazar market, Hyderabad. It is commonly called as striped snake head and snake head murrel (Talwar and Jhingran1991).Distributed in the countries like Bangladesh, India, Myanmar, Nepal, Pakistan, Sri Lanka and China Body is elongated, cylindrical with a depressed head, with a diameter 6-7 times (Talwar and Jhingran) (1991). Body color differs from grey-green to black-green, pale or yellow on sides and white below. Dorsal and caudal and anal fins are darker in colour with dark patches. (Bhuiyan 2007).

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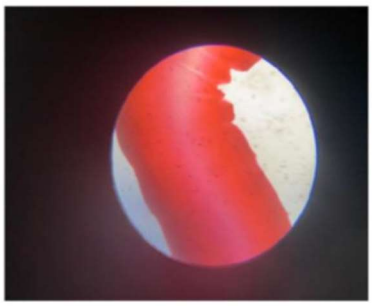
The fish which has to be dissected is taken and the organ is examined which is digestive tract or the intestine here. The dissection is done from the ventral side. The intestine is removed and placed in a petridish which contains 0.85 % Nacl. Sol. Then the intestinal content is taken and placed on a glass, then dripped with 0.85% Nacl. Sol and it is covered by a cover glass. Then the observations are made under a microscope. The parasitic identification were done.

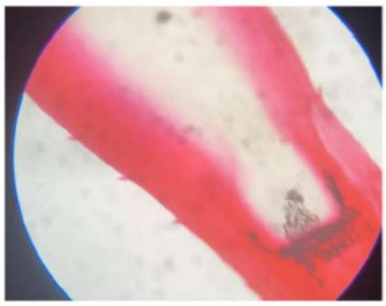
**SLIDE PREPARATION AND STATING**) After isolation and identification, parasite was placed over it and tide with thread. The slide was placed in 4% formalin for an hour Then the slides were placed in distilled water for 5 minutes and then in pure alcohol for 5 minutes Then the slides were taken out for staining the stain used were, Hematoxylin stain and Eosin First slides were stained with Hematoxylin stain for 5 minutes, then was placed in alcohol to remove extra stain. They were then stained with Eosin for 5 minutes and was placed in alcohol to wash out extra stain. After staining, the upper slide and threads were removed and the parasite was covered using a mounting agent DPX. A cover slip was placed over to prepare apermanent slide.

**Result:**

**MICROSCOPIC OBSERVATION**

The prepared slides with isolated parasites were observed under a microscope.





MICROSCOPIC IMAGES OF PARASITES (ACANTHOCEPHALANS)

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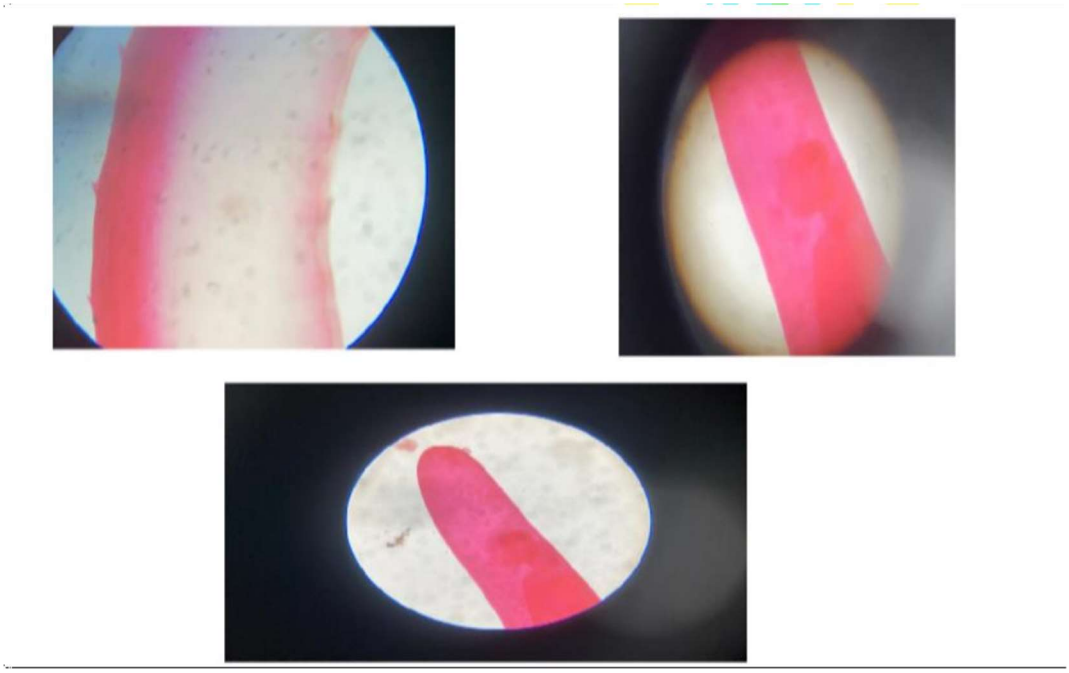

In the present investigation an attempt has been made to study the parasitic infestation in the host species, the snake head, Channa striatus and the parasites recorded was acanthocephalans, thorny headed worm, the prevalence, abundance and mean intensity was studied.

It was observed that the prevalence in different group were varied, and the mean intensity and abundance also varied, the same attempt has been depicted in (Table no.1) and in the (Graph)

The prevalence, abundance and mean intensity were found using statistical analysis (Margolis et.al) (1982)

**Prevalence (%)**

$$\text{Prevalence} = \frac{no.of\ infected\ host}{total\ no.of\ host\ examined} \times 100$$

**Abundance (%)**

$$\text{Abundance} = \frac{no.of\ parasites}{total\ no.of\ host\ examined} \times 100$$

**Mean Intensity (%)**

$$\text{Mean Intensity} = \frac{no.of\ parasites}{total\ no.of\ infected\ host} \times 100$$

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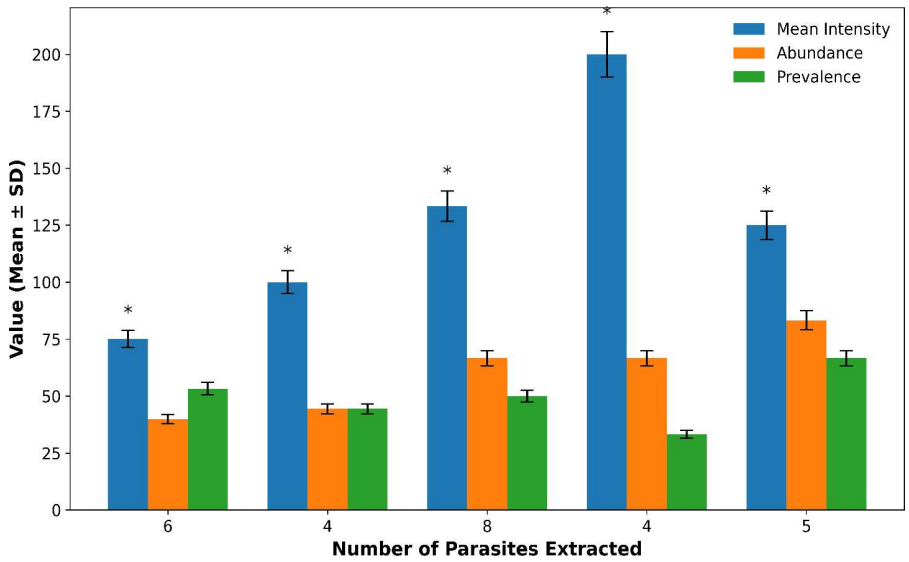
**TABLE NO. 1**

**R**epresent the prevalence, abundance and mean intensity of parasite. Values are percentage.

| No. of host | | No. of parasites extracted | Prevalence | Abundance | Mean intensity |
|---|---|---|---|---|---|
| Examined | Infected | | | | |
| 15 | 8 | 6 | 53.3 | 40 | 75 |
| 9 | 4 | 4 | 44.4 | 44.4 | 100 |
| 12 | 6 | 8 | 50 | 66.6 | 133.3 |
| 6 | 2 | 4 | 33.3 | 66.6 | 200 |
| 6 | 4 | 5 | 66.6 | 83.3 | 125 |

**Fig:1**




**Discussion:**

The fresh water species, channa striatus was dissected and examined for the extraction and isolation of intestinal parasite. The most common endo parasites are mainly protozoans, monogenean, nematodes and acanthocephalans are responsible for causing infectious parasitic diseases. But in the present investigation, it was observed that the acanthocephalans was more prevalent hence, attempt has been made to study only this species and other parasites were not given importance. Similar reports has been observed. They reported the extraction of two nematodes species and one acanthocephalans species, were as the present study represented the extraction of a single acanthocephalans species.

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