

## PARASITIC INFESTATION IN GULFAM CARPS FROM KEENJHAR LAKE THATTA, SINDH, PAKISTAN

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### Abstract:

Under this title research was carried out during 2018 and 2019 (August, 2018 and January, 2022) from Keenjhar Lake, Thatta, overall 844 specimens were collected. Sample was sorted out into five species Thalla (*Catla catla*), mold (*Cyprinus carpio*), silver (*Hypophthalmichthys molitrix*), Morakhi (*Cirrhinus mardigals*) and Rohu (*Labia rohita*). It was observed that the rate of parasitic infestation was higher in summer as compared to winter season. During present study pH value, temperature, and nature of water were the major factors affecting the population of parasites and reciprocally had an impact on the rate of infestation. The percentage of parasitic infestation among the species were calculated as *Argulus* 30%, *Lernaea* 20%, *Trichodina* 20% and *Chilodonella* 15% and the parasites attack on the fishes Gulfam 20%, Silver carp 16% , Morakhi 11% , Thallah 5% and Rohu 4%.

**Key words:** Parasitic infestation; Gulfam; Carp Fish; Keenjhar lake; Thatta; Sindh; Pakistan.

### INTRODUCTION

Gulfam fish is commonly known as carp having large and shiny scales. It is omnivorous and breeds all the year. Due to these characters it is the most popular choice for domestic culturing [1]. Several researchers clearly indicated parasitic infestation causing its weight loses condensed fecundity and high rate of mortality [2]. Both wild fish and cultured fish species of Gulfam are severely infected by crustaceans' parasites. Environmental pollution such as contamination of water due to industrial pollutants causes decline in water quality which increase chances of parasitic disease outbreak and hampered growth and feeding activities of carp. It has been reported by researchers that a variety of parasites such as nematodes and trematodes causing parasitic infestation in Gulfam [3]. Malnutrition is affecting a large portion of Pakistan's population reasons are poverty, inadequate provisions of animal proteins. Fish meat is the most suitable choice due to low price and high nutritional value but unfortunately fish population may be smashed due to parasitic infestation. Several parasites reproduce rapidly till pathogenic conditions appear resulting injurious for fish population. [4, 5]. Helminths, including nematodes, cestodes, trematodes and acanthocephalans have been reported as major parasites for carp [6]. Infestation caused by helminthes badly affecting fish host by causing mortality, fecundity and weight loss. Overcrowding and insufficient culturing of host also a reason

for huge losses of carp in Sindh, Pakistan [7, 8]. Due to the availability of sufficient literature relating to the work of several researchers of Pakistan on the parasitic infestation of carp, present study has been designed to discover parasitism in five species of carp from Keenjhar lake Thatta.

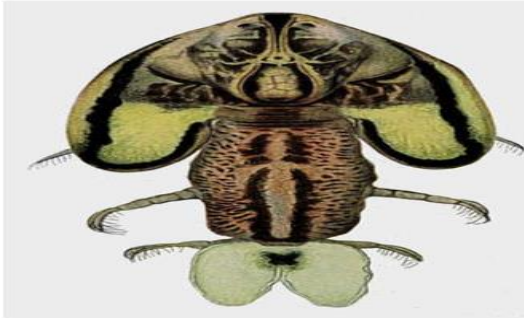
## MATERIALS AND METHODS

During present study a total 844 specimens of fresh water carps were collected from Keenjhar lake Thatta. Collection was made by the help of local fishermen in the year 2018-2019. Two - Three visits were made for the collection of host i.e carp. Specimens were captured with the help of fishing net, preserved in iceboxes. Samples were brought in the lab of Zoology Department University of Sindh Jamshoro for the lab investigation. The identification of parasites was done with the help of literature [9, 10]. Length of fish was measured (in cm) from the tip of snout to the posterior tip of the caudal fin. Prevalence percentage was calculated, for the statistical analysis was done with the help of equation cited by [11].

## RESULTS

### Parasitic Infection Rate and Parasite Found During Study

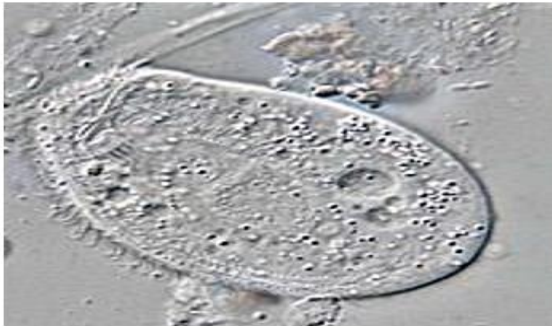
The high parasitic rate was observed in freshwater fishes and low in wild fishes. It cause on the quality of fish and due to rates reduced in markets. It was found that diverse parasites reproduce speedy cause fatality and may leads to devalue the rates in fish market. The ectoparasites infect the skins and gills and ultimately cause osmoregulation disturbance, localized hyperplasia and finally kill the host as well produce mechanism for fungi, bacteria and viruses. During the research we found *Argulus foliaceus* (fish louse) Fig.1, *Lernaea* (Anchor worm), Fig.2 *Chilodonella* (protozoan larva) Fig.3, *Trichodina domergue* (a circle disc type parasite) Fig.4. During the research monthly wise infection ratio was observed as shown in the (table.1.). Beside the monthly wise fish infection rate by Ectoparasites was also observed as (table.2). The present study reports the seasonal prevalence and intensity of parasites in various fish species. Current study was done in the months of August 2018 to July 2019. It was found parasitic ratio was high the in the months of September to November and low recorded was observed in the months of April to May, 2022.



**Figure 1: *Argulus foliaceus***



**Figure 2: *Lernaea***



**Figure 3: *Chilodonella***



**Figure 4: *Trichodina domerguei***

**Table 1: Observation of fish species monthly wise affected by parasitism**

Months	Fish Species	*1	*2	%
August	Gulfam Rahu Thaila	09	03	68%
		05	01	33%
		02	01	9%
September	Gulfam Rahu (Morakhi)	09	06	67%
		05	02	35%
		04	01	12%
October	Gulfam Rahu (Thaila)	07	2	60%
		04	2	42%
		03	1	30%
November	Gulfam Rahu (Morakhi)	09	4	50%
		04	2	42%
		03	Nil	0%
December	Gulfam Dahi (Shakur)	10	5	68%
		05	2	50%
		03	2	50%
January	Gulfam Gonja (Shakur)	08	3	70%
		04	2	48%
		05	4	50%

Note: \*1# it show the specimens while \*2# of infected fish

**Table 2: Number of fish Species infected by Ectoparasites.**

Months	Species	Infected	Argulus	Lernea	Trichodina
August	Gulfam Rahu (Thaila)	09/03	5	2	0
		05/01	2	2	0
		02/01	2	2	
September	Gulfam Rahu (Morakhi)	09/06	5	2	2
		05/02	3	3	0
		04/01	2	1	0
October	Gulfam Rahu (Thaila)	07/02	2	2	7
		04/02	3	4	0
		03/01	3	--	
November	Gulfam Rahu (Morakhi)	09/04	8	3	4
		05/02	3	2	0
		02/Nil	--	--	0
December	Gulfam Dahi (Shakur)	08/05	7	5	3
		04/02	3	2	0
		03/02	2	1	
January	Gulfam Gonja (Shakur)	04/03	4	3	4
		05/02	4	2	0
		08/04	6	5	

## CONCLUSION

It was observed that the rate of parasitic infestation in the reported species was measured higher in summer as compared to winter season. During present study pH value, temperature, and nature of water were the major factors affecting the population of parasites and reciprocally had an impact on the rate of infestation.

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