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Study of parasites present in *Clarias batrachus* Linn.

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Abstract

Clarias batrachus Linn. or Mangur or walking cat fish have good nutritional values and considered good food in body weakness. This is also a good aquarium fish. This is Fishes are sometimes infected with different parasites in water bodiesdue to pollution in such water bodies. Those fish parasites may transferto human and cause serious health problems Presence of parasites in this fish was studied in fish samples of Upper Lake, Halali Reservoir and Narmada River. Trematode (%) 17.24,24.53, 2.76; Cestode (%) 55.18, 41.51, 12.88 Nematode (%) 12.07, 20.75, 4.6; Arthropod (%) 15.52, 13.21, 0.92 in total fish samplescollected from Upper Lake, Halali Reservoirs, Narmada River. There was a minimum parasites recorded in fish sample of Narmada River.

Keywords: Mangur, water bodies, parasites, nutrition, economy.

Introduction:

Clarias batrachus Linn. commonly known as Mangur or even walking catfish is a freshwater air breathing catfish species (Catfish, 2019; Ng and Kottelat, 2008; Masterson, 2007; Fish Base, 2003). This is used to feed children to develop their body strength. This is an easily digestible food with high grade protein, highly rich iron and beneficial lipid. The culture of catfish accounted for approximately 3,201,172 tons of the production and 4,892,359,000 dollars of the profit, respectively. Fishes are sometimes infected with different parasites in water bodiesdue to pollution in such water bodies. Those fish parasites may transferto human and cause serious health problems. This is due caused whenhuman consume those infected fish raw or uncooked. Nearly 59 speciesof fish parasite species reported till date. A good knowledge on fish parasites and diseases are evidenced in a number of literatures worldwide. Parasites are one mostdiverse and popular pathogens that the agriculturist likely encounter (Odoh *et al.*, 2019). Upper lake is a major resource of portable water for the

population of the Bhopal city Madhya Pradesh. About 140,000 cube meter of water per day drawn for fulfill thedemand of nearly 40% population of this city. Halali Reservoir is second important reservoir after Upper Lake of Bhopal having 699 sq.km. catchment area and 5259 ha water spread area with a maximum depth about 30m. This is about 40km away from Bhopal and situatedin Raisen District. The Narmada River is the fifth longest river in India. It flows through thestates of Madhya Pradesh by 1,077 km. A huge diversityof fish fauna is reported in all these water bodies in which carps is found in major but in spite of that cat fish are also found as near some population. Ecological conditions for growth of such species are very good in these water bodies. The fisheries sector plays the significant role for the income and employmentgeneration. It stimulates growth of a number of subsidiary industries and is asource cheap and nutrition food. India is third largest producer of fish and second largest producer of inland fish in the world (Praveen *et al.*, 2008; Madhu Verma, 2001).

Materials and Methods:

Fish species of *Clarias batrachus* Linn. were collected using traps and gill nets from Upper Lake, Narmada River and Halali Reservoir of Madhya Pradesh. The fish was opened along the mid ventral line from the anal region to the mouth. The surface of the visceral organs, mesenteries and body cavity wasexamined carefully. The alimentary canal was separated and kept in petri dishescontaining water. The stomach and intestine was opened. To dislodge parasites,the organs were scraped by scalpel. The parasite was fixed as described by Chandra (2008). The parasite was processed and cleared through glycerine jelly. Some permanent whole mounts were prepared. Identification of parasites wasdone as described by Chandra (2008).

Results and Discussion:

Trematode, Cestode, Nematode and Arthropod groups as well as *Orientocreadium batrachoides*, *Orientocreadium clariae*, *Bovienia serialis*, *Caryophyllaeus laticeps*, *Djombangia penetrans*, *Procamallanus slomei*, *Spirocamallanus olsenia*, *Lernaea cyprinacea* and *Balanotaenia bancroftii* species of parasite were found in Upper Lake, Halali Reservoirs, Narmada River are given below in Table 01. 59 speciesof fish parasite species reported till date. These species are divided intwo major groups' i.e. small liver flukes and minute intestinal flukes. Small liver flukes having one sub group Opisthorchiidae with 12 species whereas minute intestinal flukes having three sub groups in which one isHeterophyidae with 36 species; second is Echinostomatide with 10 species; third is Nanophyetide

with 1 species (Murrel and Fried, 2007).Different species of nematods, trematodes, cestodes and acanthocephalans fish parasites are also reported in humans and somecause serious health problems (Adam *et al.*, 1997). This study reported Trematode (%) 17.24,24.53, 2.76; Cestode (%) 55.18, 41.51, 12.88 Nematode (%) 12.07, 20.75, 4.6; Arthropod (%) 15.52, 13.21, 0.92 in total fish samples collected from Upper Lake, Halali Reservoirs, Narmada River.

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Table 01 Species of parasites (intestine) found in fish samples collected from different water bodies sampling sites

Group	Species of Parasites	Parasite found in nos. of fish samples							
		Upper Lake		Halali Reservoirs		Narmada River		Total	
		Nos.	%	Nos.	%	Nos.	%	Nos.	%
Trematode	*Orientocreadium batrachoides*	6	10.34	4	7.55	2	0.92	12	7.64
	Orientocreadium clariae	4	6.90	9	16.98	4	1.84	17	10.83
Cestode	*Bovienia serialis*	9	15.52	5	9.43	8	3.68	22	14.01
	Caryophyllaeus laticeps	12	20.69	3	5.66	3	1.38	18	11.46
	Djombangia penetrans	2	3.45	4	7.55	5	2.30	11	7.01
	Balanotaenia bancroftii	9	15.52	10	18.87	12	5.52	31	19.75
Nematode	*Procamallanus slomei*	3	5.17	3	5.66	6	2.76	12	7.64
	Spirocamallanus olsenia	4	6.90	8	15.09	4	1.84	16	10.19
Arthropod	*Lernaea cyprinacea*	9	15.52	7	13.21	2	0.92	18	11.46

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