



Physiological studies of *Clarias batrachus* Linn of Upper Lake, Narmada River and Halali Reservoir of Madhya Pradesh

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Abstract

Mangur is good aquarium fish and used for beauties of large aquarium. This is reported good nutritional values and considered good food in body weakness. Physiological status of this fish was studied in Upper Lake, Halali Reservoir and Narmada River. The best and healthy on the basis of physiological examination fish was found in Narmada River.

Keywords: Mangur, Water bodies, physiological status, 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 agray or gray brown coloured, reached up to 1.6ft and weight up to 1.2 in kg (Froese and Pauly, 2011). Body is scaleless, long-based dorsal and anal fins and having several sensory barbells. This is an omnivorous species and eats earthworms, small fishes, aquatic plants, debris, insects' larvae etc. Mangur is doing mass spawning migration and performs in late spring and early summer. Longest mating is occurs up to 20hrs. Laideggs may hatch in about 30hrs (Ros, 2004). Habitat of this fish is spread from North America, Southeast Asia, Africa and almost place in the world. This fish is very important in regular food habit of people of Thailand, India, China, North America, Philippines, Indonesia, Bali, Bangladesh and many more places. They are

prepared a variety of cushions or even fried or grilled. This is prepared in light curry sauces with cinnamon and curry leaves. This is also a good aquarium fish and used for beauties of large aquarium. This fish reported good nutritional values and considered good food in body weakness. 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.

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 the demand 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 situated in Raisen District. The Narmada River is the fifth longest river in India. The Narmada is also called the Rewa. It is also known as Life Line of Madhya Pradesh for its huge contribution to the state of Madhya Pradesh in many ways. It flows through the states of Madhya Pradesh by 1,077 km. A huge diversity of 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 this river. The fisheries sector plays the significant role for the income and employment generation. It stimulates growth of a number of subsidiary industries and is a source 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). Fishing rights of Upper Lake have been given to Bhopal Municipal Corporation to a co-operative consisting of nearly 500 fishermen families. Livelihood of this area people is dependent on Agriculture and fishing (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. Total length, length of head, length of head excluding the snout, length of snout, predorsal length, length of caudal peduncle, height of body, height caudal peduncle, width of head, diameter of eyes, profile of body, barbells length, barbells nos., short barbells nos., lateral line, measurement of fins (Caudal fins, pectoral fins, pelvic fins) were measures according to the

study of Hubbs and Lagler (1958), Miller and Lea (1972).

Results and Discussion:

Physical appearance of *Clarius batracus* was scaled in terms of Total length (cm) 32, 34, 49; Length of head (cm) 7.4, 4.5, 4.7; Length of head excluding the snouth (cm) 6.3, 6.4, 6.6; Length of snout (cm) 1, 1, 1.1; Predorsal length (cm) 6.5, 5.6, 5.8; Length of caudal peduncle (cm) 12, 13, 15; Height of body (cm) 26, 27, 29; Height caudal peduncle (cm) 2.4, 2.5 2.6; Width of head (cm) 4.4, 4.5, 4.7; Diameter of eyes (cm) 1, 1, 1.1; Barbells length (cm) 3.5, 3.6, 3.9; Barbells nos. 4, 4, 4; Lateral line (cm) 20, 21, 23; Caudal fins no. 15, 17, 18; Pectoral fins no. 7, 8, 9; Pelvic fins no. 65, 68, 67 in Upper Lake, Halali Reservoir and Narmada River respectively. This value are good to prove the previous reports of Khan *et al.*, 2002; Khan *et al.*, 2000; Mollah and Khan, 1997; Verreth *et al.*, 1993.

Table 01. Physiological studies of *Clarius batracus* Linn. of different sampling sites

Parameters	Upper Lake	Halali Reservoir	Narmada River
Total length (cm)	32	34	49
Length of head (cm)	7.4	4.5	4.7
Length of head excluding the snouth (cm)	6.3	6.4	6.6
Length of snout (cm)	1	1	1.1
Predorsal length (cm)	6.5	5.6	5.8
Length of caudal peduncle (cm)	12	13	15
Height of body (cm)	26	27	29
Height caudal peduncle (cm)	2.4	2.5	2.6
Width of head (cm)	4.4	4.5	4.7
Diameter of eyes (cm)	1	1	1.1
Barbells length (cm)	3.5	3.6	3.9
Barbells nos.	4	4	4
Lateral line (cm)	20	21	23
Caudal fins no.	15	17	18
Pectoral fins no.	7	8	9
Pelvic fins no.	65	68	67

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