

Studies on food and feeding habits of major carps *Catla catla*, male and female

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Abstract

The growth of a fish is influenced by the quality and quantity of food materials available and consumed. Any variation in quality and quantity of food materials will affect the growth rate of the fish. These variations of natural food materials in a water body are under the influence of several Abiotic and biotic factors. The gut content analysis provides the information on food components and feeding habit of fish. Which is an important aspect for fish culture. In the present study food and feeding habits of major carps *catla catla* male and female.

Keywords: Quality and quantity, food materials, *catla catla*

Introduction

In general, the growth of a fish is influenced by the quantity of food materials available and consumed. Thus, any variation in quantity of food materials will affect the growth rate of the fish. The quantitative variations of natural food materials in a water body are under the influence of several Abiotic and biotic materials. These variations could be known by qualitative and quantitative analysis of fish gut contents of a fish and/or by the estimation of gastro-somatic index. Regarding the aquatic food webs, macro-benthos and plankton are the main components in the trophic dynamics of freshwater ecosystems; also they serve as a bioindicator for the environmental status in a given time. Phytoplankton is microscopic organisms that are considered as primary producers and forming a major food source for primary consumers. Zooplankton plays a role in the aquatic food chains, as a resource for higher consumers of trophic levels, including fish and especially fish juveniles.

Materials and methods

Collection and analysis

River water fishes *Catla Catla*, *Labeo rohita* and *Cirrhinus Mrigala* were collected from the Thenpenai River and carefully transported to the laboratory. Fish has been selected among others based on its feeding efficiency to analyse the gut contents so as to determine degradative process in natural and reared fish. For gut content studies ten individual of each species were collected from all over the river. They were preserved immediately in 10% formalin and brought to the laboratory for analysis. After identifying the sex of the fish measurements of scale width, weight and the approximate fullness of the proventricles were record.



Results

Catla Catla

Female

The findings of the present study shown that the food items of *Catla Catla* female fish consists of aquatic phytoplankton, zooplankton, plant matter, organic debris and miscellaneous materials. The analysis of stomach contents of *C. Catla* revealed that the food of the fish consists of aquatic phytoplankton (51.6%), zooplankton (42.8%), plant matter (3.7%), organic debris (1.6%) and miscellaneous (0.3%) in female fish (Table 1 and Fig.4).

Table 1: Various food particles in *C. Catla* female fish

S. No	<i>C. Catla</i> Female	
	Food Items	Percentage %
1	Phytoplankton	51.6
2	Zooplankton	42.8
3	Plant Matter	3.7
4	Organic Debris	1.6
5	Miscellaneous	0.3

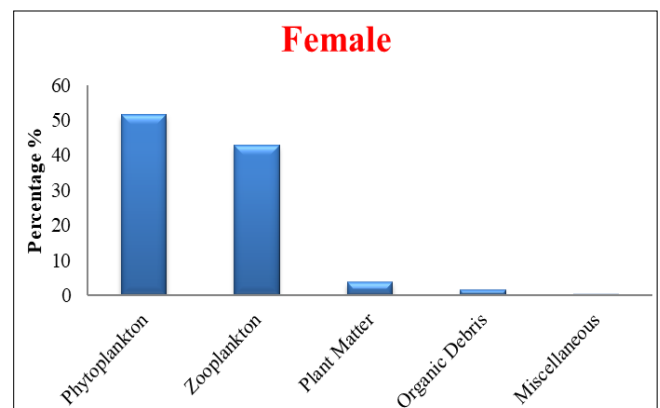


Fig 1: Various food particles in *C. Catla* female fish

To study the analysis of stomach contents of *C. Catla* revealed that the food of the fish consists of aquatic phytoplankton (63.1%), zooplankton (32.4%), plant matter (3.2%), organic debris (1.1%) and miscellaneous (0.2%) in female 50g fish (Table 2 and Fig.5).

Table 2: Various food particles in *C. Catla* female 50g fish

S. No	<i>C. Catla</i> Female 50g	
	Food Items	Percentage %
1	Phytoplankton	63.1
2	Zooplankton	32.4
3	Plant Matter	3.2
4	Organic Debris	1.1
5	Miscellaneous	0.2

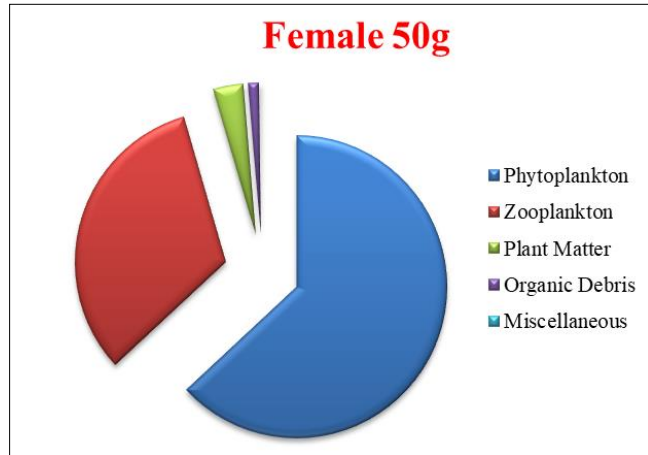


Fig 2: Various food particles in *C. Catla* female 50g fish

Male

The findings of the present study shown that the food items of *Catla Catla* male fish consists of aquatic phytoplankton, zooplankton, plant matter, organic debris and miscellaneous materials. The analysis of stomach contents of *C. Catla* revealed that the food of the fish consists of aquatic phytoplankton (52.1%), zooplankton (43.7%), plant matter (2.4%), organic debris (1.6%) and miscellaneous (0.2%) in male fish (Table 8 and Fig.13).

Table 3: Various food particles in *C. Catla* male fish

<i>C. Catla</i> Male	
Food Items	Percentage %
Phytoplankton	52.1
Zooplankton	43.7
Plant Matter	2.4
Organic Debris	1.6
Miscellaneous	0.2

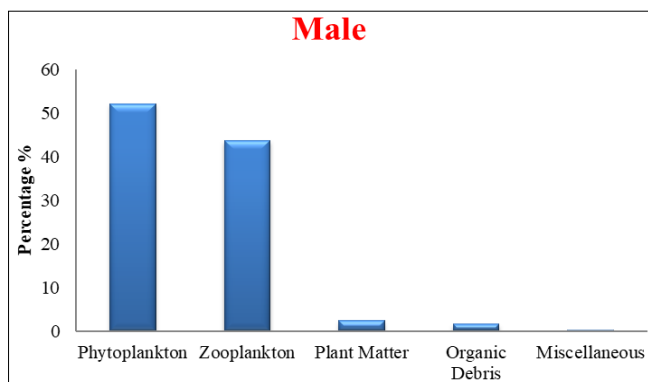


Fig 3: Various food particles in *C. Catla* male fish

In present assessment of the stomach contents of *C. Catla* revealed that the food of the fish consists of aquatic phytoplankton (62.5%), zooplankton (33.2%), plant matter (2.5%), organic debris (1.7%) and miscellaneous (0.1%) in male 50g fish (Table 9 and Fig.14).

Table 4: Various food particles in *C. Catla* male 50g fish

S. No	<i>C. Catla</i> Male 50g	
	Food Items	Percentage %
1	Phytoplankton	62.5
2	Zooplankton	33.2
3	Plant Matter	2.5
4	Organic Debris	1.7
5	Miscellaneous	0.1

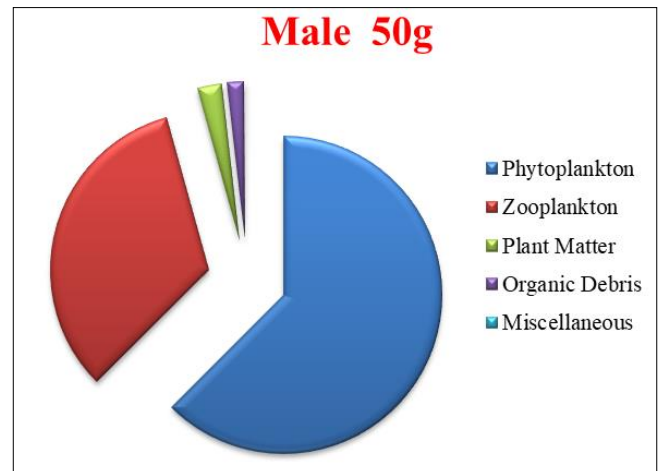


Fig 4: Various food particles in *C. Catla* male 50g fish

Plate 1: Plankton in gut content

Conclusion

In the present contribution the analysis of stomach contents of *C. Catla* revealed that the food of the fish consists of aquatic phytoplankton (67.6%), zooplankton (28.4%), plant matter (2.7%), organic debris (1.2%) and miscellaneous (0.1%) in female fish from premonsoon season. In the present research the analysis of stomach contents of *C. Catla* revealed that the food of the fish consists of aquatic phytoplankton (73.3%), zooplankton (21.6%), plant matter (1.8%), organic debris (2.7%) and miscellaneous (0.6%) in female fish from monsoon season. In the present analysis of stomach contents of *C. Catla* revealed that the food of the fish consists of aquatic phytoplankton (68.4%), zooplankton (25.3%), plant matter (2.2%), organic debris (3.4%) and miscellaneous (0.7%) in female fish from postmonsoon season. In present quantified the analysis of stomach contents of *C. Catla* revealed that the food of the fish consists of aquatic phytoplankton (52.7%), zooplankton (42.4%), plant matter (2.1%), organic debris (2.5%) and miscellaneous (0.3%) in female fish from summer season.

References

1. Alam M, Sharma S, Pathak J. Food Preferences of *Labeo rohita* (Hamilton) in River Ramganga, Uttar Pradesh, India. *International Journal of Fisheries and Aquaculture Sciences*,2011:1(2):99-105.
2. Basudha CH, Vishwanath W. Food and feeding habits of an endemic carp, *Osteobrama belangiri* (Val) in Manipur. *Indian Journal of Fisheries*,1999:46(1):71-77.
3. Bhuiyan AS, Afroz S, Zaman T. Food and feeding habit of the juvenile and adult snakehead, *Channa punctatus* (Bloch). *Journal of Life and Earth Science*.2006:1(2):53-54.

4. Das SM, Moitra SK. Studies on the food and feeding habits of some fresh water fishes of India. *Ichthyologica*,1963:2:107-115.
5. FAO. State of World Aquaculture. Fisheries Technical paper No. 500. Rome, 2006.
6. Hatikakoty G, Biswas SP. Food and feeding habits of *Oreochromis mossambicus* (Peters) from a sub-tropical environment. *J Inland Fish Soc India*,2003:35(2):57-61.
7. Kumar L, Sharma BK, Sharma SK, Upadhyay B, Mishra V. Food and Feeding Habits of *Catla catla* (Ham.) from Lake Udai Sagar, Udaipur. *Int. J Fauna and Biol. Studies*,2015:2(5):6-8.
8. Manko P. Stomach content analysis in freshwater fish feeding ecology. *University of Presov*, 2016, 1-116.