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FEEDING HABIT OF CATFISH *MYSTUS SEENGHALA*



D. H. Bhutekar

P. G. and Research Department of Zoology R. A. Arts, Shri M. K. Commerce and Shri S. R. Rathi Science Mahavidyalaya, Washim.



Co - Author Details :

D. S. Dabhade and S. D. Deshmukh

P. G. and Research Department of Zoology R. A. Arts, Shri M. K. Commerce and Shri S. R. Rathi Science Mahavidyalaya, Washim.



ABSTRACT

Food and feeding of fish is an important aspect in the growth of fish. The quality and quantity of available food in a particular aquatic environment affect the growth of fish. Present study is an attempt to investigate the food and feeding habit of popular catfish namely *Mystus seenghala* (katarna). The investigation was carried out for the period of four months from November 2015 to February 2016 in which 35 samples were examined. The gut content analysis of *Mystus seenghala* showed various types of food items such as zooplanktons, worms, crustacean, insect, small

fishes, phytoplankton, diatoms, sand and debris and macrophytes but the quantity of zooplankton and insect is higher than other constituents. These observations clearly indicate that the main food of *Mystus seenghala* is from animal origin matter. The quantitative analysis of gut content shows, the animal origin matter about 60%, the plant origin food about 20% and sand and debris about 10% and 10% matter is unidentifiable. On the basis of these findings it was concluded that this fish is a carnivorous in habitat.

KEYWORDS: *Mystus seenghala*, gut content, carnivorous, zooplankton.

INTRODUCTION

Aquaculture is an age old practice that has developed into modern science during recent years. Aquaculture has acquired a special significance, not only of its contribution of food resources but also

from the point of view of its contribution to quality of our diet. Fishes are cold blooded aquatic animals. They can found nearly all aquatic environments. 41.24 percent of all known species of fishes are fresh water fishes. Fishes forms the most important protein rich and less fat component of human diet. Fish is a good source of readily digested high quality animal protein.

Mystus seenghala is commonly known as katarna. It is a catfish, inhabiting both flowing and standing waters. This species has high rate of tolerance hence easy for cultured in the ponds and reservoirs. Its growth is faster than other commercially important fish. It attains the maturity at the age of 4-5 months. It attains maximum growth of 30-40 cm. within two year of duration **Yeragi and Yeragi (2014)**. It is an economically important catfish brought from local ponds, reservoirs, rivers and dams. The captive culture practice is not made by any one till up to for this particular catfish in the Washim area that's why it is essential to study the food and feeding of this valuable cat fish. The gut content analysis of carps is mostly studied but the gut content of cat fishes is negligibly studied. The cat fishes are economically and nutritionally important that's why the research on the gut content analysis with reference to the food and feeding had scope. The main objective of this study is to check the feeding habit of the *Mystus seenghala*. The present study also focused on the identification of exact type food consumed by the fish.

Available literature on the entitled topic is as, the food and feeding habits of an endemic catfish *Mystus montanus* (jerdon) in river tambaraparani, was studied by **raj (2004)**. **Ritakumari et. al. (2006)** investigated the food of two size-groups of the catfish *mystus gullo* in vemblai canal, and the study showed that the stomach content of this fish do not differ qualitatively with the size of fish. **Chaturvedi and singh (2012)** was studied the Food and Feeding Habits of Two Freshwater Catfish.

Babare et al., (2013) analyses the gut content of *Mystus* (Sperata) *seenghala*, the common catfishes from Godavari River in Maharashtra state and they revealed, no major variation in the gut content of *Mystus* (spereta) *seenghala* and *Wallago attu*. Yeragi and Yeragi (2014) studied the food and feeding habit of *Mystus seenghala* (sykas) the common catfish of mithbav estuary of south Kokan, Sindhudurg, and the gut content analysis of estuarine catfish *Mystus seenghala* indicates that the gut content consists of about 25-30% plant food matter, 50-60% of animal matter and rest was detritus. Feeding Habits and Diet Composition of Asian Catfish *Mystus vittatus* (Bloch, 1794) in Shallow Water of an Impacted Coastal Habitat was investigated by **Chaklader et al., (2014)** and they concluded wide variety of prey consumed, fishes (47.08%) were the most important dietary component of this species. The next major food group was diatoms (12.08%) followed by insects (11.75%), green algae (8.75%), crustaceans (5.67%), blue green algae (3.67%), plant matter (2.67%), worms (2.67%), copepods (0.58%), mollusks (0.92%). **Chaturvedi and Saksena (2013)** studied the diet composition, feeding intensity, gastro somatic index and hepatosomatic index of a catfish, *Mystus cavasius* from Chambal river (near, rajghat) morena, Madhya Pradesh. The Gut content of freshwater catfish *Rita rita* (Hamilton) from river Setlej, district kasur, Pakistan **Iqbal And Waseem (2008)** and they were recorded four food items from the gut and were identified as; crustaceans, Mollusca shells, fish scales and rotten vegetation/debris..

MATERIALS AND METHODS:

Washim is one of the districts of Maharashtra states of India. It is located at 19° 30' and 21° 13' N latitude and 76° 13' N latitude and 76° 38' E and 72° 44' E longitude. It is 300-600 m above the sea level. The region of the district spread over 5178sq.km. Fishery activities in the districts mostly performed at reservoirs, check dam, and main rivers like Painganga, Arunavati, Adan, etc. The district is having 306 numbers of reservoirs, ponds and check dams constituting 5221 hector of area under water with total

catchment area of 4718 hector.

The fishes for the present study were collected from local fish markets of Washim and Risod. Fishes were also collected different water resources such as Borala dam, Ekburji dam, Tornala dam, Sonkhas dam in Washim region of Maharashtra.

The fish sample from different resources were collected and brought to laboratory for further investigation. The fish specimens were identified to species level using the available identification key of **Talwar and Jhingran (1991)**. The length and weight of the fish were recorded together with photography of fish. The 35 samples of *Mystus seenghala* were collected, dissected and gutted at the site of collection. The gut removed from fish was preserved in 10% formalin to prevent any further digestion and decomposition of the contents. Afterwards, the gut was dissected and its contents were preserved with 5% formalin. For the qualitative and quantitative study of the food of the experimental fish, its gut content was carefully examined under low and high power microscope.

In order to find out the percentage composition of food, Numerical method of **lima and goitein (2001)** was followed where the number of individuals of each food item were recorded and expressed as percentage of the total number of organisms found in the gut content.

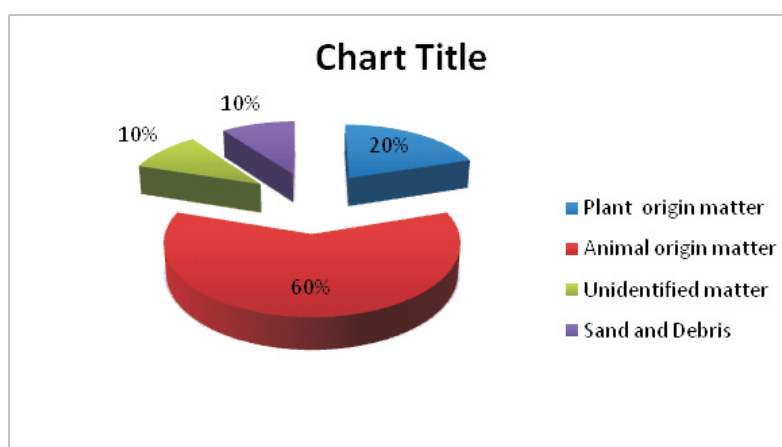
RESULT AND DISCUSSION:

Present study is an attempt to elucidate the feeding habit of *Mystus seenghala* (katarna). It is generally captured from rivers, small ponds, and reservoirs. During the present study 35 samples were examined. The gut of *Mystus* (Sperata) *seenghala* is formed from distinguishable elongated sac shaped stomach with blind stomach portion and a narrow short intestine **Babare et al., (2013)**. The present investigation the gut content analysis of this fish shows zooplanktons, worms, small crustacean, insect, phytoplankton, diatoms, sand and debris and less amount of macrophytes are also reported. In the present study the frequency of occurrence of animal origin matter is higher than other constituents of gut content. *Mystus* (Sperata) *seenghala* show considerable variations in the plant and animal matter, the animal matter found increased with increase in body size of *Mystus* (Sperata) *seenghala* and *Wallago attu*, it was 5% and 10% respectively **Babare et al., (2013)**. In the present study average percentage of the diet items is as, the animal origin matter is about 60%, the plant origin food is to 20%, and the sand and debris constitutes to 10%. about to 10% matter is unidentifiable as given in the table number I. on the basis of these findings it is clear that the animal origin food is preferred by the *Mystus seenghala*, a part of these they can eat variety of other food items also like phytoplankton's, diatoms and debris. The major variation in the food of the *Mystus seenghala* is not reported during this study but the *Mystus seenghala* can consume variety food material. The catfish, *M. cavasius* was feeding on the food material of plant origin as well as animal origin. The diet consisted of a broad spectrum of food items **Chaturvedi and Saksena (2013)**. Preliminary Study on the Food and Feeding Habits of *Schilbe mystus* (Linn. 1762) in River Nyando was studied by **Omondi and Ogari (1991)** and they concluded that, the gut content shows that *Schilbe Mystus* preys mainly on insects with chironomid larvae as the dominant Prey.

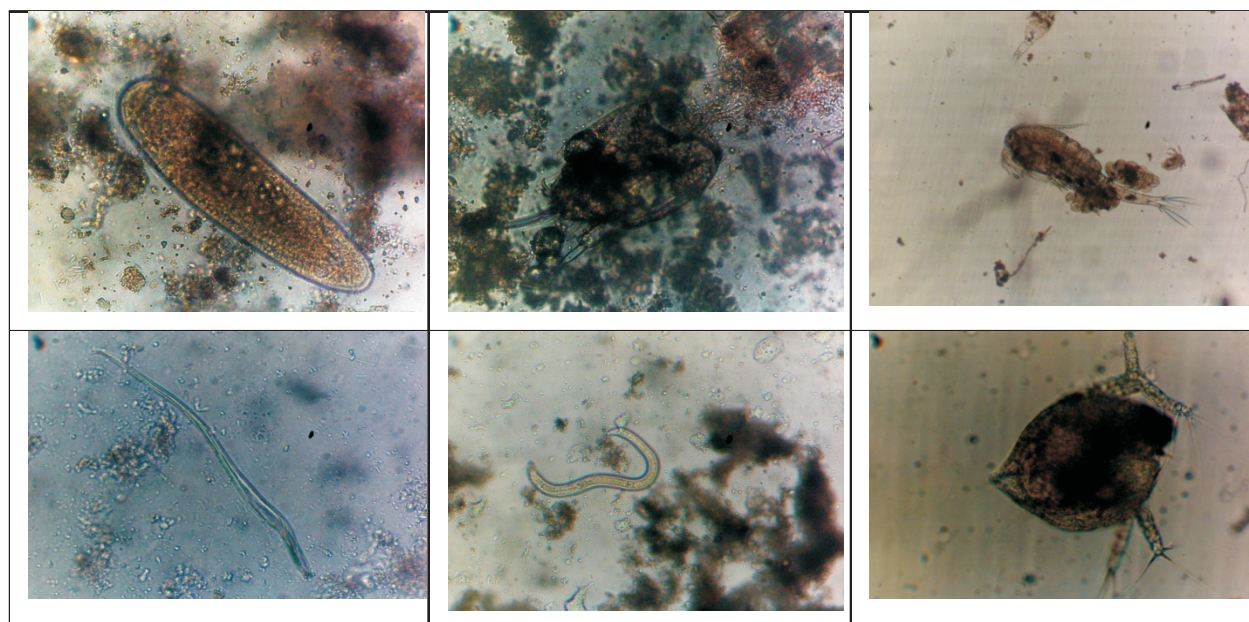
The present study depicted that the *Mystus seenghala* is a carni-omnivorous fish same kind of reporting's also made by **Babare et al (2013)**, **Yeorgi and Yeragi (2014)**. The similar type of work on the foods and related aspects of fishes was carried out by many workers **Mookerjee (1944)**, **Mookerjee et al., (1946)**, **Chacko and Kurien (1950-51)**, **Misra (1953)**, **Das and Moitra (1956)**.

Table 1- percentage values of the gut contents of *Mystus Seenghala*

| Month | Plant origin matter (20%) | Animal origin matter (60%) | Unidentified matter (10%) | Sand and Debris (10%) |
|----------|---------------------------|----------------------------|---------------------------|-----------------------|
| November | 10% | 65% | 15% | 10% |
| December | 15% | 68% | 10% | 7% |
| January | 25% | 55% | 8% | 12% |
| February | 30% | 52% | 7% | 11% |



Pie diagram showing food items of *Mystus seenghala*.



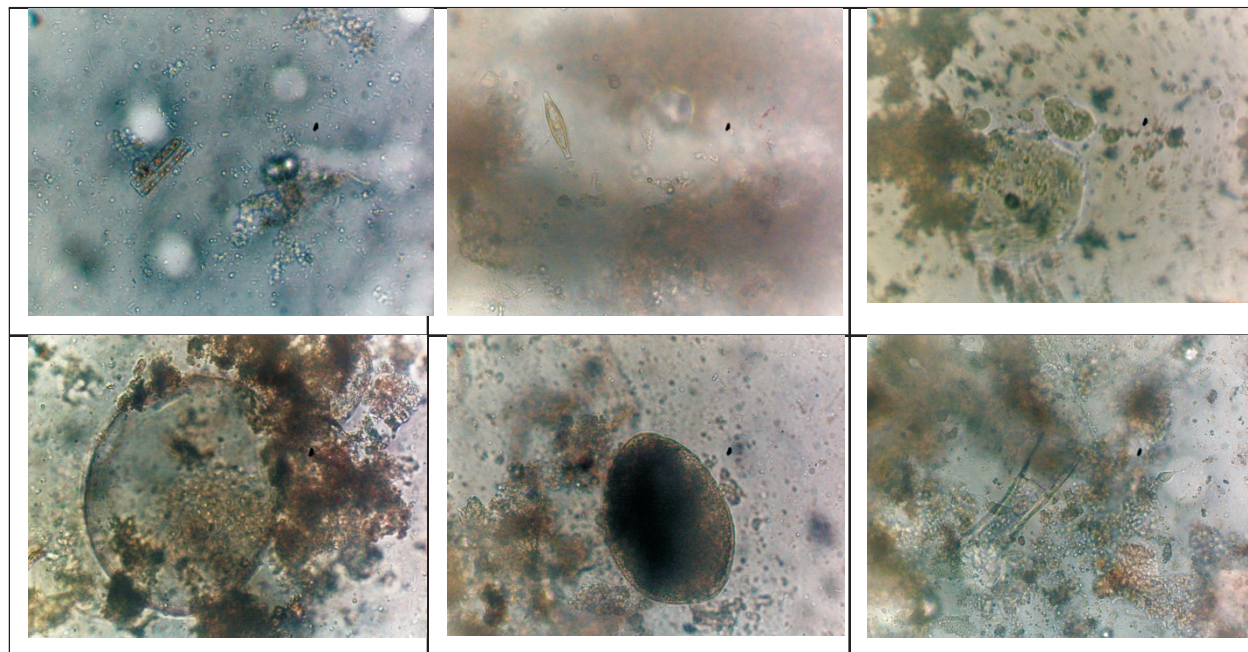


Photo plate showing food items of *Mystus seenghala*

SUMMARY AND CONCLUSION

Present study is an attempt to elucidate the feeding habit of *Mystus seenghala* (katarna). During the present study 35 samples were examined. In the present study the average percentage of the diet items is as, the animal origin matter is about 60%, the plant origin food is about 20%, and the sand and debris constitutes to 10% and 10% matter is unidentifiable as given in the table n. on the basis of these findings it is clear that the animal origin food is preferred by the *Mystus seenghala*, a part of these they can eat variety of other food items also like phytoplankton's, diatoms and debris. The major variation in the food of the *Mystus seenghala* is not reported during this study but the *Mystus seenghala* can consume variety food material. It is concluded that the *Mystus seenghala* is a carnio-omnivorous fish.

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