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## Note

# Food and feeding habits of an endemic catfish *Mystus montanus* (Jerdon) in River Tambaraparani

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## ABSTRACT

Food and feeding habits of *Mystus montanus* inhabiting Tambaraparani River fed systems were studied based on analysis of the gut contents. Index of preponderance adopted for determining the percentage occurrence and volume of food items indicated that the fish is an omnivorous bottom feeder. Gut contents showed small fishes (12.6%), cladocerans (11%), molluscs (10.8%), annelid worms (10.5%), rotifers (9%), insect larvae (7.8%), copepods (7.6%), detritus (7.6%), crustaceans (7.6%), fish scales (5%) algae (5%) and unknown items (5.5%), as food items.

Studies on food and feeding habits of fish help to determine the niche in the ecosystem, the preferred food items and also reveal the food spectrum overlapping with that of co-existing fishes ([Basudha and Vishwanath, 1999](#); [Yeon et al., 1999](#)). A classification was made by [Nikolskii \(1963\)](#) and also by [Das and Moitra \(1963\)](#) based on the relationship between fishes and their food and categorized them according to the extent of variation in the types of food consumed. The freshwater catfish *Mystus montanus* is a commercially important species. *M. montanus* were collected from Tambaraparani River fed systems during April 2001 – March 2002. The samples (50 no.) were preserved in 10% formalin immediately after collection and brought to the laboratory. Based on length and weight they were categorized

into thirteen different size groups between 60 – 125 mm at mean intervals of 5mm and 3g – 16g at mean intervals of 2g.

Gut content analysis was carried out by three different methods viz., (i). occurrence method, (ii). number method and (iii). points method. The extent of feeding was determined by the degree of fullness of stomach and expressed as empty (E), poor (P) when the gut contained very little food and not distended, moderate (M) when the gut is half-full and only slightly distended, good (G) when the gut is full and distended and heavy (H) when the gut is gorged with food and fully distended ([Mercy et al., 2002](#)). Depending upon the degree of fullness of the gut, points 0, 5, 10, 15 and 20 were given to the five categories, respectively. The index of

preponderance was worked out as proposed by Cyrus and Blaber (1983).

Most of the characters *viz.*, moderate built jaws, thin canine and weak vomarine teeth, less and moderately long gill rakers and moderately long and few coils in intestine indicated that *M. montanus* is an omnivorous fish. *M. montanus* was categorized under bottom feeders due to the occurrence of detritus (including sand) and filamentous algae in the gut (Menon and Chacko, 1956).

The gut contents of *M. montanus* consisted of algae, copepods, rotifer, insect larvae, cladocerans, crustaceans (post larvae and juveniles of shrimps and prawns, amphipods, ostracods and stomatopods), molluscs, annelid worms, small fish, fish scales, detritus and some other unknown items.

Algae (12%) formed the primary food item of *M. montanus* and comprised of *Spirogyra* and *Cladophora*, followed by copepods (11%) (*Diaptomus*, *Pseudodiaptomus* and *Cyclops* Spp.) Post larvae and juveniles of shrimps and prawns belonged to the genera *Penaeus*, *Metapenaeus* and *Macrobrachium*. Insect larvae (11%) of dragon fly nymph, mosquito larvae and water scorpion larvae were found in the gut of *M. montanus*. Cladocerans consisted of *Daphnia*, *Moina*, *Ceriodaphnia*, *Bosmina* and *Chydorous* sp. Fry of teleost fishes encountered belonged to *Mystus* Spp. and species of *Lepidocephalus thermalis*, *Tilapia mossambica* and *Puntius* spp. The analysis of food components in the gut of a species from different habitats provides information on how much the species is selective in the choice of food and how flexible it is in feeding on different food items. (Mercy *et al.*, 2002).

Among the fifty individuals, the feeding index by points method for males

showed that 13.06% were full, 34.78% three fourth, 30.43% half and 21.73% had quarter guts and similarly for the females 18.53% had full, 25.92% three fourth, 44.44 half and 11.11% had quarter guts and none of the fish had empty stomach. The total feeding indices of males and females of *M. montanus* were calculated as 60 and 63% respectively. The occurrence of various food items in the gut contents ranged between 12% and 29% (Fig 1). The percentage composition of different food items in *M. montanus* ranged between 5 and 12. Index of preponderance of *M. montanus* indicated the preference for small fishes (12.6%) followed by cladocerans (11%) (Fig 2).

In *M. montanus*, modification in alimentary canal suits for omnivorous type of feeding. Similar structural modifications are also reported in other catfishes (Rao and Karamchandani, 1986). From the present observations, the fish appears to be suited for pond culture as it feeds on food of lower trophic levels.

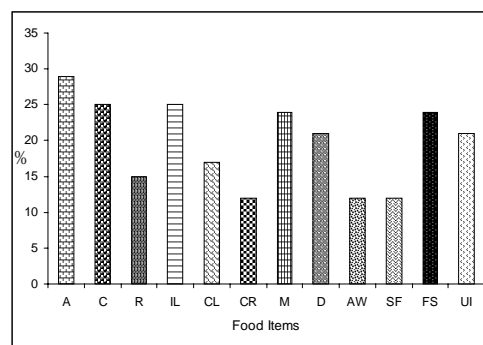


Fig 1. Gut content of *M. montanus* by occurrence method.

- |                    |                    |
|--------------------|--------------------|
| A - Algae          | M - Molluscs       |
| C - Copepod        | D - Detritus       |
| R - Rotifer        | AW - Annelid worms |
| IL - Insect larvae | SF - Small fish    |
| CL - Cladocera     | FS - Fish scale    |
| CR - Crustaceans   | UI - Unknown items |

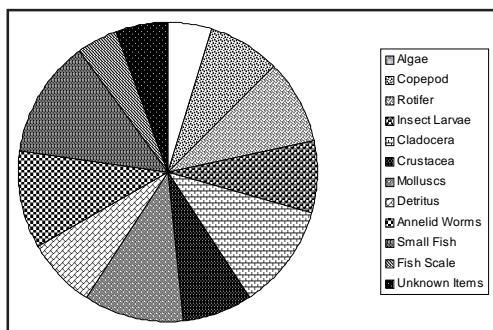


Fig 2. Index of preponderance of *M. montanus*.

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