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RESEARCH ARTICLE

A Study on the Food and Feeding Habits of the Chocolate Mahseer from Jiyabharali River of Sonitpur District, Assam, India

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ABSTRACT

This paper embodies to investigate the food and feeding intensity of Chocolate mahseer (*Neolissochilus hexagonolepis*) with respect to season, maturity stages and length of the fishes. The diet composition of *Neolissochilus hexagonolepis* during different season were determined based on the analysis of 60 specimens, collected from Jiya Bharali River. The fish are found to be an omnivore with higher feeding preference for plant material than for animal material and high values of its gastro-somatic indices species to be a voracious feeder. The feeding activity of the fishes found to be increased with the increase in size of fish.

Keywords: Chocolate mahseer, food, feeding and Jiya Bharali

INTRODUCTION

*Neolissochilus hexagonolepis*is widely recognized as a sport fish due to its tremendous size and strength facilities but this species is facing tremendous ignorance in terms of its habitat loss and over fishing, and becoming near threatened in IUCN Red list Data book. Originating from the Tawang border district in Arunachal Pradesh, Jia Bhoroli or Jia Bharali is a habitat of many coldwater fishes of species. However, the population of different fish species is in decreasing mode over the years due to various anthropogenic factors. The study of the food and feeding habit of fishes provide keys for the selection of culturable species and necessary information for successful fish farming [1]. The present study deals with food and feeding habits of *Neolissochilus hexagonolepis* from Jia Bharali River.

MATERIALS AND METHODS

The specimens collected during the one year of investigation of the rivers from October 2021-October 2022 were brought to laboratory for the purpose of performing different experiments of the food and feeding habits of the fish. Fishes were collected once in every two months for dietary analysis. The collected fishes were preserved in a plastic container with 10% formalin to prevent further digestion of food. The abdomen of each fish specimen was opened by a ventral incision along the keel and gut was removed.The gut content of the fishes was studied based on the method byNikolsky [2]. The Gastro somatic Index (GSI) was determined by method of Bhatnagar and Karamchandani[3]. The Relative Length of the Gut (RLG) has been assessed by dividing the gut length by total length of the body [4].

RESULTS AND DISCUSSION

The gut contents of comprise of Algae, Protozoa, Rotifers, Nematods, Insects, Crustaceans, unidentified vegetable matter, unidentified animal matter, and sand particles. The vegetable matte and algae are found to form the primary food of the fish which is covering most of the stomach content. The animal matter, insects larvae, Protozoa, Rotifera, Nematoda, and Crustacea constituted the secondary food but found in smaller amounts. Sand particles were also observed in some examined fishes and therefore, considered as incidental food.It may be noted in this context that food and feeding habit of *Neolissochilus hexagonolepis* studied in Simsang river of Meghalaya was found to be omnivore and considered as voracious feeder subsisting mainly on algae and vegetable matter [5]. The occurrence of sand and mud in the gut of different developmental stages the fish showed that the fish is column to bottom dweller and occasionally rise near to the surface for nibbling the flowing food items [5]. In the present study a change in the diet with increase in size was also observed. The smaller specimens consumed more of animal matter however large specimens are found to consumed more of vegetable matter.Similar informationhas also been made by Dasgupta [5.6&7].

The seasonal GSI of Chocolate Mahseer during the period of study has been presented in Fig. 1.GSI data showed there is a rise in the feeding intensity of the fish. It was found out that GSI was lowest during the breeding period (June to August) and highest during the pre-breeding period (March to May). Dasgupta [8] reported that the species breeds during the April/May October/November signifying that the period of low feeding intensity matches with the spawning period. The low feeding during thebreeding season may be due to the completely developed gonads, permitting limited space in the abdominal cavity for intake of food. Further, the intensity in food intake increased ensuing spawning and for their growth. Dasgupta[5] informed that the species is avoracious feeder in natural condition. The present study on revealed high values of its gastro-somatic indices species to be a voracious feeder.

The present study indicates that RLG. values increase with increasing total length of the fishes. The RLG values show a gradual increase from 1.75 in length (7-10 cm) to 2.13 in length (46-62cm).It is also reported that R.L.G. value has aclose relationship with the nature of food fish has taken[5]. A close relationship with the nature of food taken by the fish was observed with the relative gut length of the fishes of different feeding categories [9]. In omnivorous fishes, the RLG values were lower than herbivorous fishes because the vegetables matter requires more time for digestion [10]. The presentfinding indicates average RLG value of *Neolissochilus hexagonolepis* was 1.69 (Table 1). Gut content analysis consequences supported the studied species to omnivorous.

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Table 1: GSI and RLG of *Neolissochilus hexagonolepis* in different maturing stages

Maturing stage	Seasons	No. of fish	GSI	RLG
Stage I (Imature stage)	June-Feb	20	1.73	1.75
Stage II (Maturing stage)	March-May	20	1.98	1.89
Stage III (Mature stage)	June-August	20	0.53	2.13
Stage IV (Spent)	Sept-Dec	20	1.1	2.01

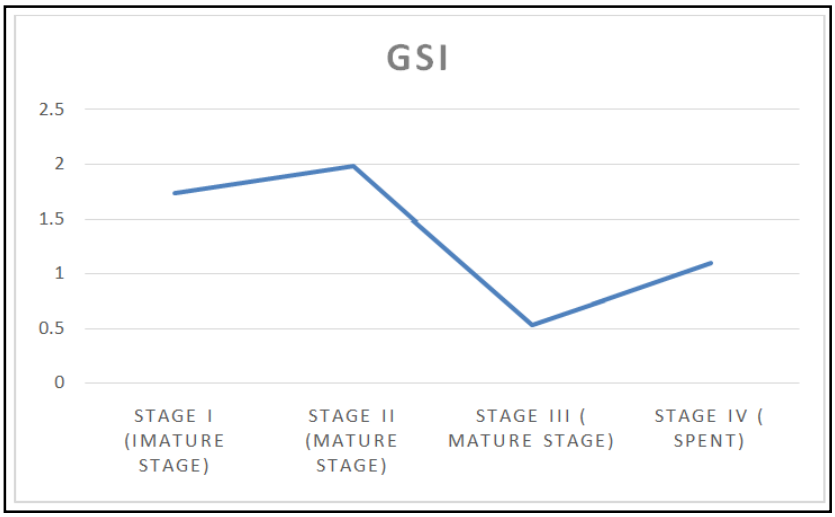

Fig. 1: Seasonal variation of GSI in *Neolissochilus hexagonolepis*