

## SOME ASPECTS OF FEEDING BEHAVIOUR OF ENDEMIC WALKING CATFISH (*Clarias brachysoma*) OF SRI LANKA

H.C.B. KARUNATHILAKE<sup>1</sup>, D.N. GUNAWARDHANA<sup>2</sup>, W.M.T.K. WASALA<sup>1</sup>,  
S. NATHANAEL<sup>3</sup>, T.V. SUNDARABARATHY<sup>3</sup> AND U. EDIRISINGHE<sup>2</sup>

<sup>1</sup>Postgraduate Institute of Agriculture, University of Peradeniya

<sup>2</sup>Department of Animal Science, Faculty of Agriculture, University of Peradeniya

<sup>3</sup>Department of Zoology, Faculty of Science, University of Rajarata

### Introduction

*Clarias brachysoma* is a freshwater fish endemic to Sri Lanka, which is listed as a threatened species (IUCN, 2000) due to habitat degradation, pollution, unscientific catching, urbanization and introduction of exotic fish species into fresh water and brackish water habitats. It belongs to family Clariidae, which widely occurs throughout most of Africa and Asia (Pethiyagoda, 1991). *C. brachysoma* adults are olive-green brown or yellow with small irregular dark spots as large as its eye. In contrast, young ones are dark brown or copper red in color (Deraniyagala, 1952). Present study was carried out to identify feed habits and feeding requirements of catfish there by to breed them under captivity and to control *Oreocromis niloticus* recruitment in the reservoirs.

### Materials and methods

Fish samples were collected from Kothmala Oya of Mahaweli River. Equal sized 9 glass tanks (75cmx45cmx30cm) were aerated. Selected 9 adult males of *C. brachysoma* with average weight ranging from 100 – 150g were introduced into each tank separately. Fish were always used after the acclimatization period. In Experiment 1, in order to determine daily requirement of live feed for *C. brachysoma*, Wild guppy (*Poecilia reticulata* - 3.5±0.5cm), *O. niloticus* (3.5±0.5cm) and *Caridina serratiostris* (2.5±0.5cm) were used as the 3 treatments and one type of feed (treatment) was used at a given time. Twelve grams of feed was measured (*ad libitum* feeding) and introduced to each tank daily at 09 00 am and remaining feed weight was

taken in the following day at 08 30 am before introducing the feed again. Experiment was carried out for ten days for a given feed. A 2-Day transition period was used between two feeds. Experiment 2 was conducted to find out the most preferred feed type of *C. brachysoma*. Three combinations of feed namely Wild guppy and *O. niloticus* or Wild guppy and *Caridina* or *O. niloticus* and *Caridina* were tested in this study at a given time. According to Experiment 1 amount of feed consumed by *C. brachysoma* was around 8g/d/fish. Therefore amount of feed used in a given treatment was 16g/d/fish (8g from Feed 1 and 8g from Feed 2). At the same time number of fish given was counted. Number of fish eaten was counted on the following day. Experiment was conducted for ten days for a given treatment. A 2-Day transition period was used between two treatments.

Main objective of the Experiment 3 was to determine the maximum length of *O. niloticus* which *C. brachysoma* can predate. Four treatments having different total lengths of *O. niloticus* were used; 3.0±0.3cm, 5.0±0.3 cm, 7.0±0.3cm and 9.0±0.3cm. Experiment period was 4days per treatment with a 2-Day transition period.

### Results and discussion

According to Experiment 1, feed consumption of an adult fish ranged between 6.5g to 8.0g.

In Experiment 2 more preference for Wild guppy than for the other two feeds was observed (Fig1). Preference for *O. niloticus* was higher than for *Caridina*. Among these three treatments best-feed combination was Wild guppy with tilapia

In Experiment 3 *C. brachysoma* can predate *O. niloticus* up to a length of  $7.0 \pm 0.3$ cm. Therefore *C. brachysoma* can be used as a method to control *O. niloticus* population in reservoirs. This is possible because the highest number of recruits available in reservoirs in Sri Lanka is tilapia, due to their natural breeding ability. Low numbers of introduced carps in the reservoir catch in Sri Lanka could be due to the high predation by carnivorous fish such as *C. brachysoma* (Sifa and Senlin, 1995). The ability to use livefeeds for *C. brachysoma* culture is useful in rearing *C. brachysoma* for captive breeding (Hsien-won and Ling, 1964).

### Conclusion

The daily consumption rate of *C. brachysoma* under laboratory conditions was found to be 6.5 – 8.0g range. Wild guppy was the most preferred live feed, but *C. brachysoma* of 100 - 150g total weight also can predate on *O. niloticus* having a total length of  $7.0 \pm 0.3$ cm. Long term research with statistical analysis is needed before any recommendation.

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### References

- Deraniyagala PEP (1952). A colored atlas of some vertebrates from Ceylon. Volume one (Fishes). pp 54-55. The Ceylon Government Press, Ceylon.
- Hsien-won W and Ling C (1964). Progress and Achievements in the Propagation of Four Farm Fishes in China. Peking Symposium. The People's Republic of China. pp. 203-218
- IUCN (2000). The 1999 List of Threatened Fauna and Flora of Sri Lanka. IUCN. Colombo pp.144.
- Pethiyagoda R (1991). Freshwater fishes of Sri Lanka. pp.159-161. Wildlife Heritage Trust of Sri Lanka, Sri Lanka.
- Sifa L and Senlin X (1995). Culture and Capture of Fish in Chinese Reservoirs. International Development Research Centre, Ottawa, Canada and Southbound Sdn. Bhd. Penang, Malaysia. pp 214.

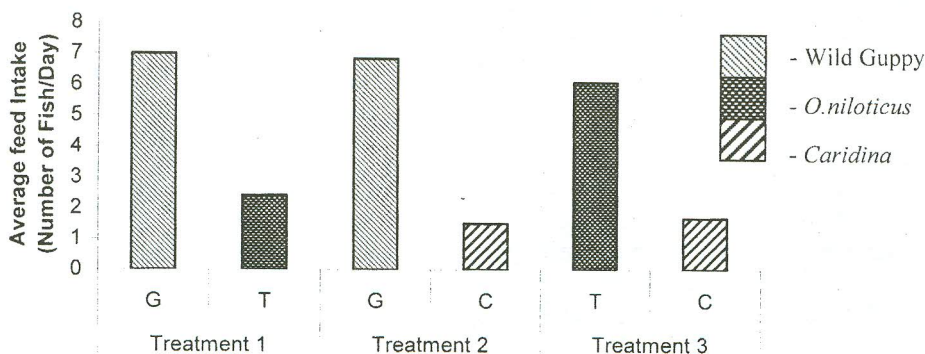


Figure 1. Feed preferences of *C. brachysoma*