

**SOME ASPECTS OF BIOLOGY ; FEEDS AND FEEDING OF THE ENDEMIC
WALKING CATFISH (*Clarias brachysoma*) AND COMPARISON OF MORPHOLOGY
WITH EEL CATFISH (*Plotosus limbatus*)**

by

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ABSTRACT

Clarias brachysoma which is also known as Walking catfish, is an endemic fish of Sri Lanka, widely distributed throughout the country. Fish type is listed as restricted fish species for exportation under the Fisheries and Aquatic Resources Act No.2 of 1996. At present it is threatened by habitat degradation, urbanization, pollution and also is highly affected by the introduction of exotic fish species (especially tilapia species) into freshwater eco-systems.

Present study was planned to acquire basic knowledge on morphology and biological characteristics of *Clarias brachysoma* particularly on feeding and reproductive biology helpful for breeding and culturing mature fish.

It was observed that *Clarias brachysoma* could be easily domesticated after different time periods, though they completely abandoned feeding. However, young fish took longer time (nearly 1-2 month/s) than adults (about 1-2 weeks) to adapt to the artificial environment. After acclimatizing they started predated on guppy, small tilapia and crustaceans. Condition Factor of the fish collected from the natural habitat (0.0088 ± 0.0002) was significantly higher than the laboratory reared fish (0.0073 ± 0.0002), mainly due to the prolonged acclimatizing period, where they resisted feeding. This indicates the need to develop improved feed rations and/or feeds to achieve an appropriate Condition Factor for breeding them under laboratory conditions.

Some of the meristic characteristics showed differences from those given in available literature. Meristic characteristics of *C. brachysoma* from the present study is D 70-

77 A 55-56 P I 8 V 6 C 10-12. The digestive track consisted of a distinctive stomach with well-developed spiral valves and highly developed pyloric caecae. Relative Gut Length was 0.91 ± 0.03 . Males and females were morphologically similar. However, by observing the genital apparatus they can be easily differentiated.

Fecundity is approximately 50 000 eggs /kg of fish and the ovaries contain eggs of similar shape and size at a specific time, which showed that *Clarias brachysoma* is a total spawner. Condition Factor of reared fish indicated that *C. brachysoma* could be reared successfully under laboratory conditions using live feeds or formulated feeds. Walking catfish (with average weight ranging from 100 – 150 g and size 25.5 cm to 30.5 cm) require 6.5-8.0g of live feed per day and Wild guppies were most preferred.

Plotosus limbatus (Valenciennes, 1840) (Eel catfish) is a demersal, native catfish distributed in the coastal region of Sri Lanka. A comparative study of the morphometric and meristic characteristics of *Plotosus limbatus* with *Clarias brachysoma* was done as to compare similarities and differences among marine and freshwater catfishes.

In both catfishes, deviations were not observed from the available literature on body shape and the colouration. Condition Factor of the *Plotosus limbatus* collected from the natural habitat was 0.0040 ± 0.0001 . Digestive tract consists of a long alimentary canal. Stomach is not well developed. The relative gut length recorded was 4.91 ± 0.03 . Meristic characteristics of present study was found to be D1 I 5 D2 procurrent 233 - 240 P I 9 V 13 C 9-11 in *P. limbatus*.