Biological Forum – An International Journal **6**(1): 152-153(2014)

ISSN No. (Print): 0975-1130
ISSN No. (Online): 2249-3239

Morphometric and Meristic Variations in Fins of *Channa orientalis* (Sch.) from Fresh Water Habitats in Akola District (M.S.) India.

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(Received 08 April, 2014, Accepted 05June, 2014)

ABSTRACT: The fresh water fish which has been selected for present study were *Channa orientalis* which is locally known as Dhok. The fishes were collected from local dam with the help of fishermen. Thus the present investigation of morphometric and meristic study such as fins length, width, fin ray numbers were to give clear idea and identification of *Channa orientalis* from other species of same genus from fresh water habitats of Akola district (M.S.) India. The species showed L/W ratio to give phenotypic differences between different fins relating its length, width, and number of fin rays.

Key words: *Channa orientalis*, Morphometric, meristic variations, fins

INTRODUCTION

The success of fishery industry largely depends on the growth and reproductive potential of the concerned fish species. The development and improvement of the species mostly depends knowledge of the biology. The shape and structure of fins and fin rays of fishes show modifications due to varied swimming habits, habitat, sex, growth factors, age and size of the fishes; it is also known that the morphometric and meristic parameters are influenced by environmental factors (Weisel, 2000). Information on the morphometric and meristic characteristics of fins of fishes are useful in marking sex determination, species identification and in ascertaining the suitability of cultivable species (Dynes *et. al.*, 1999). *Channa orientalis* is one of the common commercial species found in rivers, lakes, and other water bodies of study area. Species is rich with nutrients so beneficial for consuming. The species is easy to identify because of its specific snake heads and olive gray colour. This species seems to nearly same like C*hanna punctatus* but with small shape and size (Charjan 1997).

Thus the present investigation of morphometric and meristic study such as fins length, width, fin ray numbers were to give clear idea and identification of *Channa orientalis* from other species of same genus from fresh water habitats of Akola district (M.S.) India.

MATERIAL AND METHODS

The freshwater fish *Channa orientalis* were obtained from local sources. They were treated with 0.5 % $KMnO_4$ for five minutes for dermal disinfection. Then they were acclimatized for period of fortnight to laboratory condition and were feed on small pieces of earthworm. The fishes were of 12-14 Cm in length with weighing 18-30 g were selected for the experiment. The physicochemical parameter of the aged tap water was determined periodically as per standard methods (APHA 1998). Physicochemical Parameters of water were pH =7.5 $\pm$ 0.5, Temperature = 23° $\pm$ 1°C, Dissolve O_2 = 6.5 $\pm$ 0.3 mg/L, Total Hardness = 232 $\pm$ 3 mg/L, Total Alkalinity = 243 $\pm$ 3 mg/L**.** Morphometric and meristic study of fins was done by the measurement of different fins their characteristics such as fin length, fin width and number of fin rays. Fin variables relationship is observed between standard length of fish *Channa orientalis*.

RESULTS AND DISCUSSION

The species showed L/W ratio to give phenotypic difference between the different fins relating its length, width, and number of fin rays. The observed morphometric and meristic measures of various fins are represented in the following Table 1.

Table 1: Morphometric and Meristic study of different fins with their fin length, width and fin rays numbers of freshwater fish *Channa orientalis.*

Fins	Length	Width	Fin rays
Dorsal fin	3.98 ± 1.56	0.42 ± 0.13	21.49 ± 3.81
Anal fin	2.98 ± 1.28	0.27 ± 0.01	16.79 ± 2.23
Caudal fin	1.47 ±1.04	0.58 ± 0.39	11.08 ± 4.48
Pectoral fin	1.48 ± 0.79	0.51 ± 0.28	11.00 ± 0.17
Pelvic fin	0.89 ± 0.01	0.29 ± 0.09	05.98 ± 0.02

The study showed that length, width and fin rays showed increases with increase in length but within a specific range. According to Turan *et.al.,* (2005) and Omoniyi and Agbon (2008); distinct environmental structure causes the high morphometric variation and plasticity which response to differences in environmental condition such as food abundance and temperature. Usha (2000) reported that anal, caudal, pectoral, and pelvic fins of *Catla catla* were longer than *Cyprinus carpio* and *Labeo rohita* due to its surface feeding suited ecologically which is rich in vegetation and species of *Clarias gariepinus*. They belong to benthic habitat and have robust bodies and large pectoral fins which allow them to withstand current on smaller, smoother substratum. Dynes *et.al.,* (1999) found that dorsal and pectoral fin lengths of pelagic fish were shorter than littoral ones in brooke chart, Salvelias fountinalis. The morphometric study of fins of *Channa orientalis* were seen broadly by their location, shape and size. In species long dorsal fin, anal fin, lobed shaped caudal fin, two pectoral fin, two pelvic fins.and varying number of fin rays were also noticed (Charjan, 2013).

The increase in size of the fins was accompanied by branching and segmentation of fin rays. Such increase was noticed in number of fin rays once these were formed because a constant number of rays are characteristic of a particular species, genus or family (Usha and Prakasam 2005).

CONCLUSIONS

From obtained results, it is cleared that fresh water fish *Channa orientalis* showed the phenotypic differences between different fins regarding its length, width and number of fin rays and growth pattern with their increasing body length.

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