

VARIATION IN THE FAT CONTENT IN MUSCLES OF *GOBIUS BIOCELLATUS* FROM KAYADHU RIVER NEAR HINGOLI (M.S).

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Abstract:

Gobius biocellatus is a teleost fish, one of the species of the genus gobius and it is distributed in fresh waters throughout the plains of India (Day, F. 1878). The variation in the fat content of muscles (tissue) in both the sexes of *G.biocellatus* was studied over a period of twelve months from January 2003- December 2003. The percentage of mature fishes goes on increasing from March onwards up to peak spawning season (Monsoon). This inclined to conclude here that the fat reserve is more in July in ripe fish, which has to undergo spawning exertion. The present study deals with the variation in the fat content of muscles of *G. biocellatus* from Kayadhu river near Hingoli , Maharashtra.

Keywords: *G.biocellatus*, fat content and muscles.

Introduction:

Fish is an important food item and supplies animal proteins, otherwise lacking in Indian dietaries. The nutritive values in different species and in a species itself .The variations in the chemical constituents such as water, fat, protein, ash and minerals of any fish are attributed to the changes in growth, size, maturity, sex and locality. Fish being a good protein food, it is also necessary to have the knowledge of its chemical composition so that the fish fauna can be utilized as food in the regular diet to meet the protein deficiency. It is also considered worthwhile to determine how far the type of fish normally consumed by the poor class people comes up to the requirements as a first class protein food. *G.biocellatus* is one such fish, which is eaten, in large quantities by the poor sections. Investigation on the nutritive value of various food fishes has been carried out abroad by a good number of workers. First record of analysis of fishes was published by Atwater (1888). Siddhiqui (1967) studied Seasonal variations in ascorbic acid content and calcium content of different tissues of *Ophiocephalus punctatus*. Some work on the chemical composition of the common carp, *Cirrhina mrigala* and fresh water murrel, *Ophiocephalus punctatus* was carried out by Jafri (1968) and Jafri & Khawaja (1968). Bapat (1971) investigated the nutritive value of some fishes of Marathwada. Madalapure (1973) studied the chemical composition of *Barbus ticto*. Bruce, J.R.(1974) studied changes in the chemical composition. of the tissue of herring in relation to age and maturity.

G.biocellatus being abundant in river, ponds and estuaries of India and being very much relished by people for its taste, has a good demand in the market. The present work deals with only adults showing variations in fat content in muscles.

MATERIALS AND METHODS:

The material was collected every month for period from January 2003 to December 2003 from Kayadhu River near Hingoli, Maharashtra. The adult male and female specimens of *G.biocellatus* were taken in equal numbers and analyzed separately. The muscles were removed free from skin and bones and weighed accurately. The muscles were analyzed for the determination fat. A known weight of sample was extracted with solvent ether in a Soxhlet apparatus for at least 6 to 8 hours. The receiver flask which was weighed accurately before the experiment was again weighed with the fat after evaporating the ether first on a water bath and finally in a

current of hot air then cooling properly. The increase in weight gave the amount of the fat extracted from the known weight of the sample.

RESULT AND DISCUSSION:

Fat is one of the important constituents, which contributes maximum to the chemical composition in all tissues showing high degree of variations. This variation can be precisely correlated with spawning activities. The variation in the fat in both the sexes of *G.biocellatus* is shown in Table No.01. The percentage of fat in muscles varied between 1.30 (Oct.) and 2.95 (April) in males and 1.06 (June) to 2.20 (March) in females. The maximum percentage of fat was noted in April in males and in March in females. In general the high values of fat were seen during Feb. to May in males and in March to April in females. It can be seen from the table that the percentage of mature fishes goes on increasing from March onwards up to peak spawning season (Monsoon). This inclined to conclude here that the fat reserve is more in July in ripe fish, which has to undergo spawning exertion. Milroy, T.H. (1908) Studied changes in the chemical composition of the herring during the reproductive period. Beyza and Akif (2009) reported that *C. gariepinus* contained 5.02% crude fat and according to Rosa et al. (2007) the mean crude fat content of *C. gariepinus* was 5.70. Samy et al. (2012) have reported that feed composition has a major influence on the proximate composition of salmonids.

Table No. 01: Monthly variations in the percentage of Fat content in the Muscles of male and female *G.biocellatus* (%).

Month	Fat Content (%)	
	Male	Female
January	1.69	1.63
February	1.95	1.79
March	2.05	2.2
April	2.95	2.15
May	2.56	1.23
June	1.85	1.06
July	1.63	1.65
August	1.71	1.82
September	1.85	1.91
October	1.3	1.72
November	1.52	1.79
December	1.89	1.89

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