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STUDY ON GONADOSOMATIC INDEX OF FRESH WATER FISH *CATLA CATLA*

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ABSTRACT

The present study was undertaken to trace accurately spawning period of *C.catla* This is reported in terms of gonadosomatic index which express the relative change in gonad weight to the percentage of body weight. During present study two peak values of GSI were observed indicating that there are two peak periods of spawning in *C. catla* first from June 2017 to September 2017 and second from May 2018 to August 2018.

KEY WORDS: *C. catla*; Gonadosomatic index; preparatory period; spawning

INTRODUCTION

Reproduction in fishes is one of the basic biological feature enabling survival and continuation of species. For efficient fish culture and effective management practices it is essential to study reproductive biology. Determination of Gonadosomatic index is of prime importance for detecting the spawning period of any fish. The present study was undertaken to trace accurately spawning period of *C. catla*. This is reported in terms of gonadosomatic index which express the relative change in gonad weight to the percentage of body weight. Rao (1972) reported observations on spawning of *C. reba*. Gupta (1975), studied biology of *C. reba* Admassu (1996), studied breeding season of *Oreochromis niloticus.*

MATERIALS AND METHODS

Material for the study was obtained from Godavari river dist. Nasik (Gangapur dam). Matured and immature fishes were weighed along with the weight of gonads monthly. Later % of gonad weight in relation to the total body weight was calculated by using the following formula.

$$Gonadosomatic\ index = \frac{weight\ of\ gonads}{weight\ of\ body}\ X\ 100$$

Gonadosomatic index of *C. catla* was calculated. After calculating the % of GSI the period of maturity of fish was divided into following stages (Quyyam and Quasim, 1961) *Ophiocephalus puntatus.*

Prespawing phase
Spawning phase
Postspawning phase
Preparatory phase

Gonadosomatic index of fish increases with maturation being maximum during peak period of maturity and abruptly declines after spawning.

RESULTS AND DISCUSSIONS

The GSI of *C. catla* was estimated monthly for females and values are expressed as percentages in Table 1. It increases from 16% in February to 30 % in April indicating the pre spawning period. It decreases from 31.2% in May to 12% in August and again from 28.6% in June to 9% in September indicating the spawning period It decreases from 8.8% in October to 8.5% in November indicating the post spawning period. It gradually increases in G.S.I from 10% in December to 12.5% in January indicating the Preparatory Phase.

In *Catla catla* the peak value off G.S.I is observed twice one in June and second in May which is suggestive indication of two spawning periods, first from June to September and second from May to August similar, two G.S.I peaks where observed by Jay Prakash and Nair (1981) in *Pearl suratensis* (Bloch) in April to October.

During present study greater peak of G.S.I is observed in May and lesser peak in June. Small peak observed during June may be due to maturation of small fraction of population and the relatively higher peak in May indicating greater

number of fishes were matured during the period. Thus in *Catla catla* active spawning takes place from May to August and June to September hence observations recorded are in agreement of Salzen (1958) in *Ethmalosa dorsalis.*

Table 1. Gonadosomatic index of *C. Catla*

Month	Average Weight of body (gms)	Average weight of ovary (gms)	GSI (%)
May	2500	780	31.2
June	1500	430	28.6
July	1200	320	26.6
August	1000	120	32
September	1200	100	8.3
October	900	80	8.8
November	880	75	8.5
December	1000	100	10
January	2000	250	12.5
February	2500	400	16
March	2600	550	21.1
April	3000	800	30

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