

Study of gonadosomatic index of fresh water Fish *Channa gachua*

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ABSTRACT

The scientific management for obtaining high yield of fish production eventually calls the adequate and in-depth study of breeding mechanism. In order to complete the task present study was undertaken to trace accurately spawning period of *C. gachua*. 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 the peak value of GSI was observed only once in the month of May (47.29%) indicating only one spawning period in *C. gachua* i.e. from June to August.

Key words: *Channa gachua*; Gonadosomatic index; preparatory period; spawning

INTRODUCTION

Due to ever increasing population and industrialization availability of agriculture land is reducing day by day. Moreover in a developing country like India where 30% of population is still suffering severely by malnutrition and health hazards fish food may be useful tool to provide proteineous and easily digestible food item. The scientific management for obtaining high yield of fish production eventually calls the adequate and in-depth study of breeding mechanism. In order to complete the task present study was undertaken to trace accurately spawning period of *C. ghachua*. This is reported in terms of gonadosomatic index which express the relative change in gonad weight to the percentage of body weight.

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.

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

GSI of *C. ghachua* was calculated. After calculating the % of GSI the period of maturity of fish was

divided into following stages (Quydam and Quasim, 1961) *Ophiocephalus puntatus*.

- 1) Prespawning phase
- 2) Spawning phase
- 3) Postspawning phase
- 4) Preparatory phase

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

RESULTS AND DISCUSSION

GSI of *C. gachua* were estimated monthly for females and values are expressed as percentages in table No. 1. GSI values rises from 20.5% in March to 47.29% in May indicating prespawning period. It gradually decreases from 26.3% in June to 8.41% in August indicating the spawning period. It abruptly decreases uptill 5% in September to 8.47% in November indicating post spawning period. It gradually increases from 10.74% in December to 15.2% in February indicating preparatory period. In *C. ghachua* peak value of GSI is observed only once in the month of May indicating only one spawning period from June to August. Similar observations were recorded by Nazir *et al.*, 1978 in *Barbus luetus*; Brewer *et al.*, 2008; Sindhe *et al.*, 2004 in *Notopterus notopterus*; Brewer, 2008 in small riverine fishes, Mchlisin Musri Musman, 2010 in *Rasbora towarensis*.

Table No. 1: Gonadosomatic Index of *Channa gachua*

Month	Average wt. of body (gms)	Average wt. of ovary (gms)	G.S.I (%)
September	26	1.3	5
October	16.4	1.1	6.70
November	23.6	2	8.47
December	26.75	2.87	10.74
January	12.75	1.87	46.66
February	12.95	1.97	15.2
March	13.6	2.8	20.5
April	16	6.0	37.5
May	18.5	8.75	47.29
June	15.2	4	26.3
July	13.5	3.5	25.9
August	10.1	0.85	8.41

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