

Study of Gonado Somatic Index of Fresh Water Fish *Channa marulius*

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Abstract- The gonadosomatic index of the *channa marulius* from Son river Shahdol. Studies have been carried out 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 *channa marulius*. This is reported in terms of gonad somatic 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 (47.56%) indicating only one spawning period in *channa marulius* . i.e. from June to August.

Index Terms- *Channa marulius*, Gonad somatic index, preparatory period, spawning.

I. INTRODUCTION

Channa marulius is common fresh water fish. It has economic value too. It is very much liked in tribiled areas in Shahdol Dist. fish body weight and weight of gonad gives the Gonadosomatic index (GSI). 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 portentous 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 accurately spawning period of *channa marulius*. This is reported in terms of gonad somatic index which express the relative change in gonad weight to the percentage of body weight.

II. MATERIALS AND METHODS

For the present study sample will be collected from Son River in Shahdol Dist. Matured and immature fishes were collected from sep.2012 to 2013and 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 *channa marulius* was calculated. After calculating the % of GSI the period of maturity of fish was divided into following stages.

- 1) Pre spawning phase
- 2) Spawning phase
- 3) Post spawning phase
- 4) Preparatory phase

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



Channa marulius

III. RESULTS AND DISCUSSION

GSI of *channa marulius* were estimated monthly for females and values are expressed as percentages in table No. 1. GSI values rises from 24.35% in March to 47.56% in May indicating pre spawning period. It gradually decreases from 29.06% in June to 15.28% in August indicating the spawning period. It abruptly decreases uptill 8.21% in September to 11.71% in November indicating post spawning period. It gradually increases from 13.46% in December to 19.86 % in February indicating preparatory period. In *channa marulius* 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 reverine fishes, Mchlisin Musri Musman, 2010 in *Rasbora towarensis*.

Table.1: Gonadosomatic index of *Channa marulius*.

Month	Average wt. of body (gms)	Average wt. of ovary (gms)	G.S.I (%)
September	28	2.3	8.21
October	18.4	2.1	11.41
November	25.6	3	11.71
December	28.75	3.87	13.46
January	14.75	2.87	19.45
February	14.95	2.97	19.86
March	15.6	3.8	24.35
April	18	7.0	38.88
May	20.5	9.75	47.56
June	17.2	5	29.06
July	15.5	4.5	29.03
August	12.1	1.85	15.28

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