

Study of Gonado Somatic Index of Fresh water fish *Channa striatus* (Bloch,1793) from Son river

Kirti Tiwari*

Department of Zoology, Govt. T.R.S. College, Rewa- 486 001(India)

Author for Correspondence - Kirti Tiwari, M.Sc., Ph.D. Department of Zoology, Govt. T.R.S. College, Rewa (M.P.) kirtikuhutiwari@gmail.com +918962569961

Abstract

Studies have been carried out on maturity of oocyte (egg) in *Channa striatus*. Somatic index of the *Channa striatus* from Son river Shahdol district In order to complete the task development of oocytes was measured with the help of oculometer and maturity stage of gonad was found to vary according to different breeding phases. The present study on gonads was undertaken to trace accurately spawning period of *Channa striatus*. This is reported in terms of gonado somatic index which expresses 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 (47.24 %) indicating only one spawning period in *Channa striatus*. i.e. from June to August.

Channa striatus (Bloch, 1793), a common fresh water minor crop is a good edible fish. It has economic value too. It is very much liked in tribal areas in Shahdol District. Fish body weight and weight of gonad gives the Gonado somatic 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 productivity eventually calls the adequate and in-depth study of breeding mechanism. In order to complete the task, the present study was undertaken to accurately find out the

spawning period of *Channa striatus*. This is reported in terms of Gonado somatic index which expresses the relative change in gonad weight to the percentage of body weight. Relevant literature 1-8 has been consulted to prepare the manuscript.

The present study sample was collected from Son River in Shahdol District. Matured and immature fishes were collected from August 2015 to 2016 and 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.

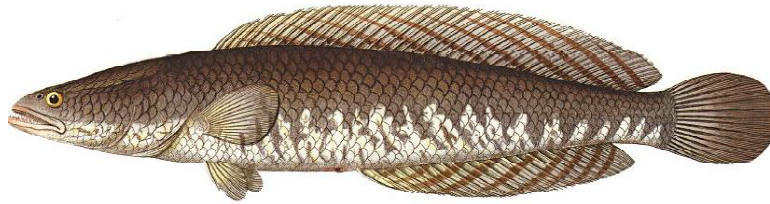
$$\text{Gonado Somatic Index} = \frac{\text{Weight of gonads}}{\text{Weight of body}} \times 100$$

GSI of *Channa striatus*, 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

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



GSI of *Channa striatus*, were estimated monthly for females and values are expressed as percentages in table No.1. GSI values rose from 19.25% in March to 47.24% in May indicating pre spawning period. It gradually decreased from 25.65% in June to 8.33% in August indicating the spawning period. It abruptly decreased to 5.2 % in September to 8.54 % in November indicating post spawning period. It gradually increases from 11.11% in December to 15.24% in

February indicating preparatory period. In *Channa striatus* peak value of GSI was observed only once in the month of May, indicating only one spawning period from September to December. Similar observations were recorded by Nazir *et al.*,⁷ in *Barbus luteus*; Brewe *et al.*,⁴; Sindhe *et al.*,⁷ in *Notopterus notopterus*; Brewe³, in small riverine fishes, Musman⁶, in *Rasbora towarensis*.

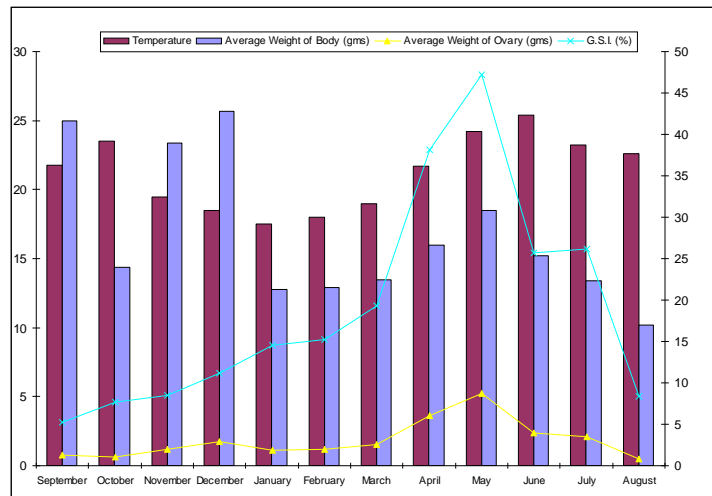


Fig. 1 : Gonadosomatic Index of *Channa striatus*

Table : Gonadosomatic Index of *Channa striatus*

Months	Temperature	Average weight of body (gms)	Average weight of ovary (gms)	G.S.I. (%)
September	21.8	25	1.3	5.2
October	23.5	14.4	1.1	7.63
November	19.5	23.4	2	8.54
December	18.5	25.65	2.85	11.11
January	17.5	12.75	1.86	14.58
February	18.0	12.92	1.97	15.24
March	19.0	13.5	2.6	19.25
April	21.7	16	6.1	38.12
May	24.2	18.5	8.74	47.24
June	25.4	15.2	3.9	25.65
July	23.2	13.4	3.5	26.11
August	22.6	10.2	0.85	8.33

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