Study of Gonadosomatic Index of Freshwater Fish Channa Punctatus

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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. punctatus. 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. punctatus i.e. from June to August.**

Index Terms **- Channa punctatus; 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. punctatus. 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. Nashik (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.

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

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

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1. Prespawing phase
2. Spawning phase
3. Postspawning phase
4. Preparatory phase

RESULTS AND DISCUSSION

GSI of C. punctatus were estimated monthly for females and values are expressed as percentages in table No. 1. GSI values rises from 20% in March to 47.36% in May indicating prespawning period. It gradually decreases from 26.6% in June to 10% in August indicating the spawning period. It abruptly decreases uptill 8% in September to 8.84% in November indicating post spawning period. It gradually increases from 11.53% in December to 15.38 % in February indicating preparatory period. In C. punctatus peak value of GSI is observed only once in the month of May indicating only one spawning period from June to August. (Table No. 1) 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.

CONCULSION

From above study it is concluded that the fish C. punctatus peak value of GSI is observed only once in the month of May indicating only one spawning period from June to August.

Table No. I: Gonadosomatic Index of Channa punctatus

Month	Average wt. of body(gm)	Average wt. of ovary(gm)	G.S.I (%)
September	25	2	8
October	16	1	6.25
November	22.6	2	8.84
December	26	3	11.53
January	12.55	1.97	15.69
February	13	2	15.38
March	14	2.8	20
April	18	7	38.8
May	19	9	47.36
June	15	4	26.6
July	13.5	3.5	25.92
August	10	1	10

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