

Study On Ponderal Index Of Fish *Puntius sarana*(Hamilton) From Godavari River, At Nanded, Maharashtra State, India

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Abstract: Study of Ponderal index of freshwater fish *Puntius sarana*(Hamilton), from Godavari River, at Nanded, Maharashtra State were observed from April 2015 to March 2016. The obtained results indicate that population of *Puntius sarana* is better in condition throughout the year even in spawning season. LeCren (1951) remarks “The ponderal index forms an important part of fishery research and has often been issued to provide additional information about spawning, feeding and other aspects related to the well being of a fish. Several other workers have been made investigations on the condition factor of different species and correlated the variation in ‘K’ values with various factor in life of fish. Hickling (1930, 1940), Hile (1936), Thompson (1943), Menon (1950), LeCren (1951) have correlated the ponderal index with spawning cycle and feeding intensity in *Johnius dussumieri*. Review of literature shows there is no information regarding the ponderal index of *Puntius sarana*. Therefore the present investigation was undertaken with a view to study the ponderal index of this fish.

Keywords: fish *Puntius sarana*(Hamilton), Godavari River, spawning season, ponderal index.

1. INTRODUCTION

Ponderal index forms an important biological measures usually used in fish biology research to express the relative condition of a fish and provide additional feeding etc related to the well being of a fish. It is denoted by ‘K’.

2. MATERIAL AND METHODS

In the present study 220 males and 380 females ranging between 11 cm to 26.6 cm in total length were analyzed by adopting formula $K = W/L^3 \times 100$ proposed by LeCren (1951), where ‘W’ is the weight and ‘L’ is the total length of the fish. After calculating the ‘K’ values individually the data were analyzed separately for males and females in 3 cm class intervals with a view to study the fluctuations in ‘K’ values in relation to size at first maturity and growth of the fish and the spawning season.

3. RESULTS AND DISCUSSION

The mean ‘K’ values of different length groups are represented in the table no.1 and fluctuations during different months of the year in the table no. 2. From table no. 1 the lowest ‘K’ values for male 0.9810 and for female 1.0044 recorded at 25.6 cm for 28.5 cm size group in male and 25.6 cm to 28.5 cm group in female. Fluctuation in ‘K’ values in each 3 cm size group shows in Fig 1. Table no. 2 which shows ‘K’ values during different months, it can be seen that ‘K’ values for the males were slightly lower than those for female. Table no. 2 shows that the ‘K’ values fluctuated between 0.9962 and 1.3422 in males in the month of March 2016 and September respectively. In females the ‘K’ values fluctuated between 0.8789 in March 2016 and 1.9411 in May 2015. From table no. 2 it can be seen that ‘K’ values for male were highest during September and decline gradually thereafter up to March and for female the values were highest during May and decline gradually thereafter up to March. Monthly fluctuation in ‘K’ values show in Fig. 2. A fish is to be in better

condition when the value of 'K' is more than 1 and in poor condition when the value of 'K' is less than 1. In case of *Puntius sarana* the values are more than 1 in all months except in March indicates that the population of *Puntius sarana* is better in condition throughout the year even in spawning season. It can be seen from the table no.1 that the highest 'K' values 1.3007 was recorded in 10.5 to 13.5 cm size group in male. In female the highest 'K' value 1.7824 was seen in 13.6 to 16.5 cm in size group. The 'K' values for the females are slightly higher than that of those for males, indicating that female gains more weight than the males.

Table- 01: FLUCTUATIONS IN K VALUES OF *Puntius sarana* IN EACH 3 CM LENGTH GROUP

Sr. No.	Size Group (cm)	Male		Female	
		Number of Fishes examined	'K' values	Number of Fishes examined	'K' values
1.	10.5-13.5	71	1.3007	31	1.0789
2.	13.6-16.5	79	1.0754	184	1.7824
3.	16.6-19.5	22	0.9819	68	1.1563
4.	19.6-22.5	37	0.9943	63	1.1193
5.	22.6-25.5	10	0.9930	27	1.1948
6.	25.6-28.5	01	0.9810	07	1.0044
Total		220		380	

Table 02: MONTHLY FLUCTUATIONS IN K VALUES OF *Puntius sarana*

Sr. No.	Year and Months	Male		Female	
		Number of Fishes examined	'K' values	Number of Fishes examined	'K' values
1.	April 2015	28	1.0249	22	1.0727
2.	May 2015	22	1.1466	28	1.9411
3.	June 2015	14	1.1378	36	1.3384
4.	July 2015	23	1.1141	27	1.2196
5.	August 2015	19	1.1575	31	1.3112
6.	September 2015	18	1.3422	32	1.2371
7.	October 2015	18	1.1775	32	1.2210
8.	November 2015	10	1.1938	40	1.1268
9.	December 2015	17	1.0822	33	1.0600
10.	January 2016	19	1.1238	31	1.1008
11.	February 2016	16	1.0541	34	1.0843
12.	March 2016	16	0.9922	34	0.8789
		220		380	

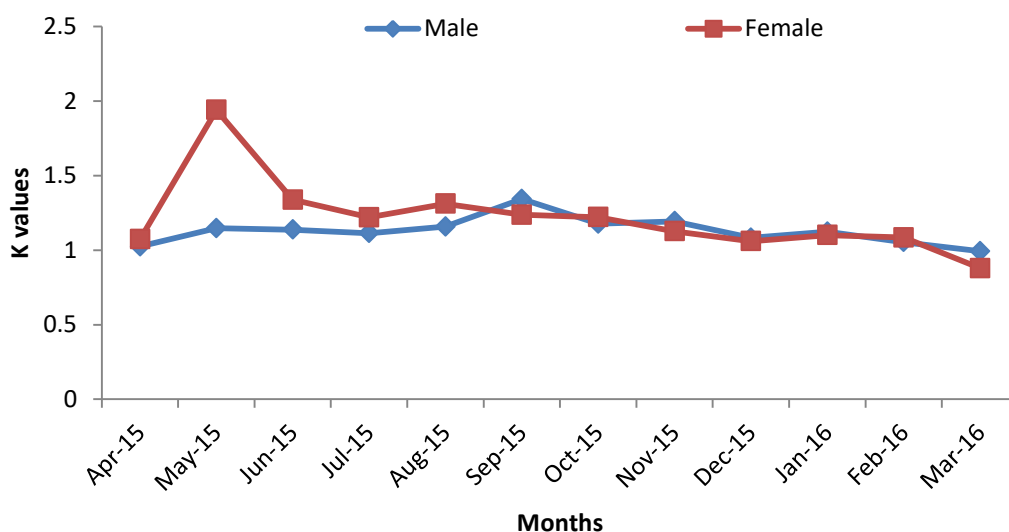


Fig. 1. Monthly fluctuations in K values of *P. sarana*

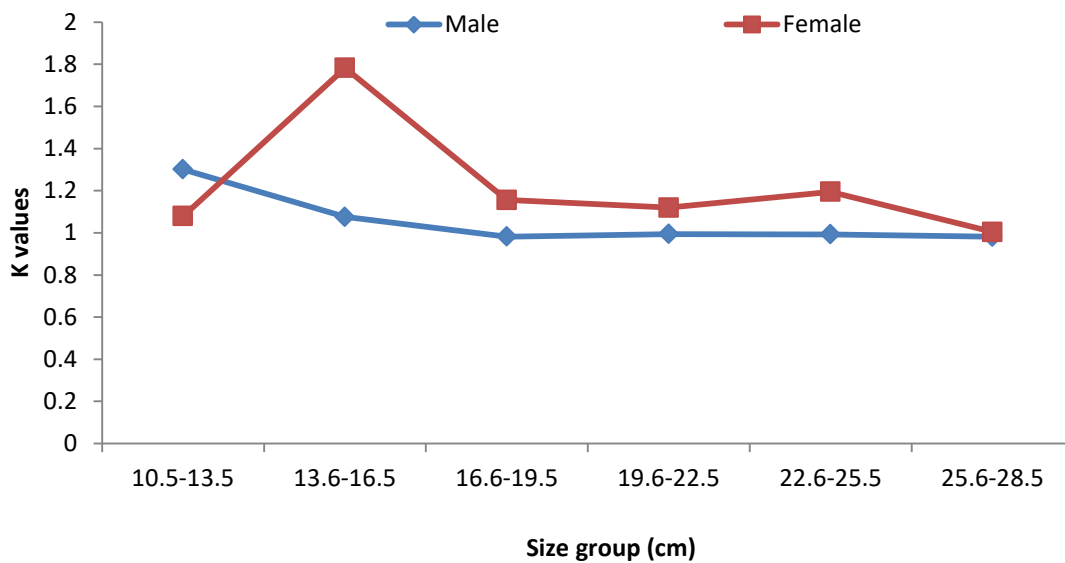


Fig. 2. Fluctuations in K values of *P. sarana* in each 3 cm length group

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