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FECUNDITY OF FISH PUNTIUS SARANA SARANA (HAMILTON) FROM GODAVARI RIVER, AT NANDED (MAHARASHTRA)

M. M. Deshmukh and K. S. Shillewar Department of Fishery Science, N.E.S. Science college, Nanded, India.

ABSTRACT

The fecundity is the most important aspect in biological studies of fishes. In these study 70 specimens of fish Puntius sarana were collected out of them 20 males and 50 females was observed. By using (Lacrane, 1951) equation follows the relationship between fecundity and various are calculated.

KEYWORDS: Fecundity, Puntius sarana.

INTRODUCTION

Fecundity is reproductive capacity of a fish determined by the number of eggs stored in each spawning season and its knowledge is extremely important in successful management and exploitation of its fishery.

The analysis of fecundity data in relation to size and weight of the fish has often been used to provide a reliable index of density dependent factors affecting the population of physico-chemical factors affects fecundity. Dense population of fish brings in intra and inters specific competitions for food and reproduction.

Clark (1934) and Franz (1940) have observed that the fecundity in fishes increases in proportion to the square if the length. Hickling (1940), observed that the fecundity

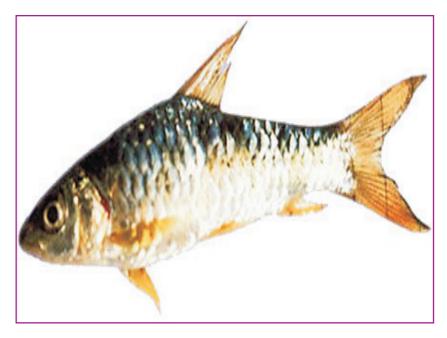
increased at a rate above the cube of the length in Herring of Southern North area. Simpson (1951) concluded that the number of eggs is related to the volume and consequently to the cube of the length. Lehman (1953), found straight relationship between the fecundity and length there is a direct proportional in fecundity with increase in length, weight and age of the fish.

MATERIALS AND METHODS

Mostly sampling of normal, good, healthy and mature fish specimens of the *Puntius sarana* were done for

estimation of fecundity from station B, on river Godavari at Nanded (Maharashtra State) Mature specimens were collected in the months of June to August -2016.

Altogether 70 specimens of Puntius sarana were collected during sampling from June 2016 to August 2016. Out of which 20 specimens were male and 50 were females. From these 50 females, a sample of 10 fish was drawn randomly to determine fecundity. Specimens ranging from 18.6 cm to 26.6 cm in length in total body length, from the tip of snout to distal end of caudal fin were selected. Before dissecting the females, ovaries were weighed carefully and weight noted. After dissecting the females, ovaries in stage IV were preserved in 10 %



formalin. The ovaries after being hardened for few days, removed from formalin and surface moisture was blotted with blotting paper. The entire ovary was then weighed accurately to nearest milligram.

A small portion (1gm) from the middle region of the ovary was then teased on a slide and few drops of formalin were put on them and number of ova were counted under the microscope. Care was taken to ensure that the ova were spread evenly in single layer. From the number of ova obtained from the small portion of ovary of known weight (1gm), the number of ova in the entire ovary was calculated on the basis of its total weight.

OBSERVATIONS AND RESULTS

The fecundity estimates of the entire specimens examined were made by egg counts and also from variables like weight of fish and weight of ovary. The females ranged between 18.6 cm to 26.6 in length and 66.0 and 202.7 gm in weight, where as the weight of ovary varied between 4.0 and 6.9 gm.

In *Puntius sarana*, the total number of ova varied from 4780 to 8715 which has given an average of 1228 number of eggs per gram body weight (Table 1)

DISCUSSION

Studies on fecundity are receiving much attention as they play a key role in fish stock assessment. Fecundity has been determined for many fishes which provide information of population and stock recruitment problems.

Different relationship has been found to exist between fecundity and various parameters. In Catla the fecundity is more closely related to weight of fish. The rate of total number of ova varied from 2,72,945 in a fish measuring 529 mm total length to 27,17036 in the fish measuring 824 mm total length. The minimum fecundity of Catla was 2,10,118 number of eggs in a fish measuring 504 in length and largest specimens of 840 mm had the maximum fecundity of 34.21,005 number of eggs (Sakhare,2000).

According to Chonder (1977) the number of eggs production depends upon the weight of ovary more closely as observed during present study of *Puntius sarana*, also appears to be related more specifically to the ovary weight.

Sr. No.	Total	Total	Length	Weight	Fecundity	Total
	Wt. of	length	of ovary	of ovary	in 1 gm	eggs
	fish	of fish	(cm)	(gm)		
	(gm)	(gm)				
1	66.00	18.60	6.00	4.00	1195	4780
2	66.30	19.00	7.00	4.50	1220	5490
3	88.90	20.60	7.10	4.70	1185	5569
4	90.00	20.90	7.40	4.90	1205	5904
5	116.90	22.30	7.60	5.10	1209	6165
6	117.50	22.50	7.90	5.40	1217	6572
7	137.20	23.70	8.10	5.63	1221	6874
8	141.18	24.14	8.20	5.36	1229	6587
9	196.34	25.60	9.30	6.21	1237	7682
10	202.70	26.60	9.60	6.90	1249	8681

Table 1. Fecundity of *Puntius sarana* in Godavari, Maharashtra.

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