

CORRELATIVE ANALYSIS OF SOME DETRIMENTAL FACTORS WITH OVARIAN MATURITY IN THREE HILLSTREAM FISHES

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ABSTRACT

Spawning behaviour of hillstream fishes is influenced by a consortium of environmental factors. The present paper deals with the study of impact of four important detrimental factors, viz., water temperature, velocity of water current, dissolved oxygen and total alkalinity on the maturation of the ovaries of three hillstream fishes, viz., *Garra lamta*, *Glyptothorax telchitta* and *Botia dayi* Hora from Khoh river of Garhwal Himalaya.

Keywords- Correlative Study, Dobriyal Index, Detrimental Factors, Hillstream Fishes

INTRODUCTION

Fish exhibit considerable difference in their breeding behavior due to varied environmental conditions of different regions. It has been well understood that several ecological factors some or the other way greatly influence the spawning behaviour of fishes. Studies on the ecology of spawning niches of fishes have been made by several workers (Khan, 1945; Ganapati and Alikunhi, 1950; Job et al, 1955; Dobriyal and Singh, 1987 and Dobriyal et al, 2000). In the present study an attempt has been made to correlate the female maturity of three hillstream fishes with the Dobriyal index of sexual maturity from river Khoh near Kotdwar Garhwal.

Table 1- Correlative analysis of detrimental abiotic parameters with the Dobriyal index for ovarian maturity in three Hill-stream fishes (Average values).

Months	Temperature (°C)	Velocity (m.sec ⁻¹)	Dissolved oxygen (mg.l ⁻¹)	Total alkalinity (mg.l ⁻¹)	DI of <i>Glyptothorax telchitta</i> (Female)	DI of <i>Garra lam ta</i> (Female)	DI of <i>Botia dayi</i> Hora (Female)
Jan.	12.8	0.35	12.5	42.0	0.21	0.23	0.38
Feb.	13.2	0.33	12.2	41.1	0.23	0.30	0.74
Mar.	20.0	0.30	11.1	37.0	0.28	0.35	0.76
Apr.	23.5	0.26	10.3	36.6	0.31	0.36	0.8
May	26.5	0.32	9.9	35.5	0.35	0.43	0.87
Jun.	28.2	0.38	8.2	30.5	0.98	1.69	1.33
Jul.	26.8	0.80	8.0	29.6	0.97	1.61	1.51
Aug.	26.3	1.0	7.8	26.5	0.25	0.47	1.37
Sep.	24.8	0.45	8.6	36.6	0.22	0.42	0.88
Oct.	23.0	0.28	9.1	36.0	0.22	0.38	0.86
Nov.	21.3	0.27	9.8	37.0	0.23	0.37	0.54
Dec.	16.2	0.29	10.2	39.3	0.23	0.35	0.32

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