

BIOCHEMICAL ALTERATIONS IN THE GONADS OF *SCHIZOTHOROX RICHARDOSONII* (HAM.) EXPOSED TO MIXTURE OF NICKEL & CHROMIUM

Devendra Singh, and S.K. Aggarwal*

Department of Zoology and Biotechnology, Baba Farid Institute of Technology, Dehradun

*Department of zoology, Kumaun Univ. Campus, Almora, U.K.

ABSTRACT

Exposure of *Schizothorox richardosonii* (HAM.) to a mixture of 7.0 MgNi/l - 12.0 MgCr/l (safe concentration) and 150 Mg Ni/l - 20 Mg Cr/l (sub lethal concentration) for 60 days, during different reproductive phases, viz., Preparatory, Pre-spawning, spawning and post spawning revealed that the mixture of sub lethal concentration of metals had more deleterious effect on the gonads than the mixture of safe concentrations. The decline was maximum in testes during spawning phase and in ovaries during preparatory phase following exposure to mixture of safe concentration.

KEY WORDS: Fishes, Nickel, Chromium, and Pollution.

INTRODUCTION

The indiscriminate discharge of heavy metal by the industries has resulted in serious water pollution problem due to toxic nature of these metal and their adverse effects on water quality. As the polluted over as contains wide variety of metals and other toxic substances, there are chances of synergistic action of these substances. These may contaminate the aquatic environment, which in turn is likely to affect the aquatic organism including fish. Virk & Kaur, K. (1998) reports on biochemical alternation in the gonads of *Cyprinus carpio* L.N.N and reports are also available on the effect of heavy metals on biochemical composition of gonds (Shukla & Pandey 1984; Kontal *et al.* 1989).

MATERIAL AND METHODS

Live *Schizothorox richardosonii* (Ham.) were collected from the river of Kosi (Almora) Utrakhhand during different reproductive phase (Preparatory, Pre-spawning, spawning and post spawning) and assimilated to the laboratory conditions for 20 days, prior to exposer to metals. Experiments were conducted in glass aquaria (1X1X0.5 m) having capacity of 150 liter. Dechlorinated tap water (pH 7.3-7.5) was used to run the

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Table. 3 Cholesterol content (Mg/100 wet tissue) of gonads of *S. richardsonii* following 60 days exposure to mixture of Nickel and Chromium.

Reproductive phase	Male			Female		
	C	SC	SLC	C	SC	SLC
Preparatory	10.60 ^a	7.86 ^c (-28.16)	9.10 ^b (-16.20)	9.80 ^a	4.20 ^b (-53.16)	9.02 ^c (-52.10)
Pre-spawning	8.26 ^a	5.20 ^b (-36.10)	5.16 ^c (-42.68)	7.31 ^a	4.24 ^b (-43.82)	4.16 ^c (-32.60)
Spawning	6.38 ^a	4.21 ^c	4.39 ^b (-42.16)	7.16 ^a	3.80 ^b (-33.18)	3.96 ^c (-36.16)
Post-spawning	6.53 ^a	6.13 ^b (-18.48)	4.10 ^c (-12.02)	7.00 ^a	4.06 ^b (-29.31)	4.686 ^c (-28.16)

Table. 4 Phospholipids content (Mg/100 wet tissue) of gonads of *S. richardsonii* following 60 days exposure to mixture of Nickel and Chromium.

Reproductive phase	Male			Female		
	C	SC	SLC	C	SC	SLC
Preparatory	8.48 ^a	6.23 ^c (-50.10)	3.18 ^b (-12.18)	6.21 ^a	6.10 ^b (-3.28)	5.22 ^c (-12.10)
Pre-spawning	9.72 ^a	4.16 ^c (-63.11)	4.26 ^b (-63.23)	6.20 ^a	3.68 ^b (-50.10)	4.05 ^c (-32.62)
Spawning	7.23 ^a	5.80 ^b (-16.12)	6.32 ^c (-23.61)	5.18 ^a	3.68 ^b (-38.18)	3.62 ^c (-36.68)
Post-spawning	6.69 ^a	5.62 ^b (-26.12)	6.15 ^c (-38.28)	4.42 ^a	3.32 ^b (-18.10)	3.47 ^c (-52.21)

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