Abstract

Sperm motility is one of the indicators that is used in sperm quality assessment. This study was conducted to determine the sensitivity ratio of (*Schizothorax zarudnyi*) spermatozoa at different concentrations of heavy metals such as Cadmium, Mercury and Zinc. To this perpuse, Wild broods of snow trout (males 660.83 ± 19.57 g) were caught in the brood ponds and transported to zahak hatchery for artificial spawning. Than were selected 6 snow trout and their Spermatozoa were exposed to 0, 0.1, 1, 10 and 100 mg/l of $CdCl_2$, $HgCl_2$ and $ZnCl_2$ and sperm motility percentage and total duration times were compared with the control group (Distilled water,Zero concentration). Results show that sperm motility parameters decreased significantly ($p<0.05$) with increase of pollutant concentration. While this concentration of zinc was not deadly. Although the results obtained showed that Cadmium caused a more significant decrease in sperm motility compared to the Mercury and Zinc, trentments. Over time, with decrease of percentage off motile spermatozoa, were still sensitive to low concentration. So that the time in which only 10% or 40% of the sperm are motile, in contact with the concentration of 0.1 mg/l Cadmium and Mercury and Zinc were significantly different from the control group. While, the time in which 80% of sperm is moving, the difference was less than control group. Due to the fact that changes of sperm moltility can influence the reproduction efficiency rate of breeder, thus exposure to Cadmium, Mercury and Zinc will decrease quality of sperm of *schizothorax zarudnyi* in the reproduction time.

Key words: *Schizothorax zarudnyi,* Motility, Heavy metals, Spermatozoa**.**

University of Zabol

Graduate school

PA Campus

Department of Fisheries

The Thesis Submitted for the degree of Master of Science

(In the field of Fisheries)

Effect of Cadmium (Cd), Mercury (Hg) and Zinc (Zn) on sperm motility parameters of Snow trout

(*Schizothorax zarudnyi*)

Supervisors:

Dr. A. Gharaei

Dr. J. Mirdar Harijani

By:

A. Golshahi

February 2016