

## Abstract

The Snow Trout (*Schizothorax Zarudnyi*) is an endangered species of endemic fish in Hamoon Lake, Sistan, Iran. Natural fish population have declined during the last several years because of the continuation of recent drought, shortage of food sources and existence of non-endemic species. So, the possibility of improvement of breeding methods with using of diluents solutions in order to increase of fertilization, eyed egg and hatching was studied. For this purpose eight female broods with average weight and length  $1545/62 \pm 295/43$  gr and  $54/37 \pm 3/85$  cm respectively and sixteen male brood with average weight and length  $623/08 \pm 180/69$  gr and  $38/91 \pm 5/40$  cm were selected respectively. Then mixed sperms and egg without any coelomic fluid was fertilized under four treatment groups including: Treatment Number one: 5/54 gr NaCl, 2/422 gr Triss, 3/57 gr Glycin, regulated in pH=8/4 and solution in 1 lit distilled water. Treatment Number two: 7/305 gr NaCl, 0/735 gr  $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$ , regulated in pH=8/4 and solution in 1 lit distilled water. Treatment Number three: coelomic fluid that was separated from egg by using net. Treatment Number four: distilled water as control treatment. The results showed that motility duration of sperm in 1<sup>th</sup>, 2<sup>th</sup>, 3<sup>th</sup> and 4<sup>th</sup> treatments was  $65/25 \pm 7/36$ ,  $30/8 \pm 12/83$ ,  $73/33 \pm 2/117$ ,  $40/00 \pm 1/61$  sec. respectively, and the duration of forward movement was  $6/25 \pm 4/71$ ,  $15/00 \pm 12/63$ ,  $52/33 \pm 1/90$ ,  $34/66 \pm 2/51$  sec. respectively and eyed eggs percentage was  $16/82 \pm 6/42$ ,  $53/00 \pm 4/66$ ,  $82/50 \pm 3/84$ ,  $73/33 \pm 2/08$  respectively and hatching percentage was  $55/05 \pm 5/42$ ,  $71/43 \pm 081$ ,  $49/60 \pm 6/25$ ,  $37/72 \pm 4/32$ . The study of spermatology parameters and the percentage of eyed egg and hatching showed that that were a significant difference between eyed egg percentage and hatching in the number one and two ( $p \leq 0/05$ ). So treatment number two is an effective diluents solution for improving breeding of this fish.

**Key words:** *Schizothorax Zarudnyi*, diluents solutions, Sperm motility, Sistan.



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