

Abstract

Fertilization is one of the most sensitive stages in fish reproduction, in which spermatozooids that are activated with water are in contact with the egg after fertilization. The aim of this research was to find the best method for insemination in order to increase the efficiency of artificial insemination in *Schizothorax zarudnyi*. For this purpose, two fish-producing fish and four male squirrel fishes were used. After anesthesia, female fertilization and spermatogenesis were used for fertilization from 5 treatments (dry fertilization with clay solution, dry fertilization with carbamide solution, semi-dry fertilization with saline water, wet fertilization with saline water and by use of celomic liqueid). Ovarian fluid was used as control treatment for saline water and 15 replicates. Eggs were transferred to Weiss incubators after water absorption and removal of adhesion. After 24 hours of incubation, three incubators were randomly assigned to determine the fertilization rate. SPSS software was used to analyze the data from the experiments. For general comparison between treatments, one way ANOVA was used and Tukey test was used to compare the mean of the treatments. The results showed that the wet fertilization method had a higher percentage of success (96.2%) than semi-wet (88.6%), routin (68.1%), carbamide (54.4%) and clay (31.5%) Percent). Also, the wet and semi-wet methods did not differ significantly, but with other methods, there was a significant difference. In normal fertilization, carbamide and clay also showed significant differences with each other and wet and semi-wet methods. According to the results of the wet method, the best method for fertilization of *S. zarudnyi* was known.

Key words: Fertilization, *Schizothorax zarudnyi*, Coelomic fluid.



University of Zabol
Graduate School
Faculty of Natural resources
Department of Fisheries

**The Thesis Submitted for the Degree of Master of Science
(In the field of Fisheries)**

Title:

Assessment of *Schizothorax zarudnyi* artificial reproduction by using off different fertilization media

Supervisor:

Dr. Javad Mirdar Harijani

Dr. Ahmad Gharaei

Advisor:

Dr. Ali Arshadi

By:

Javad Motamedizadeh

January2018