

# EFFECTS OF OVULIN HORMONE ON BREEDING PERFORMANCE OF ORANDA

**GOLDFISH (*Carassius auratus*)**

 **Md. Main Uddin Mamun**

Roll No.: 0118/01 Registration No.: 0572

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**The thesis submitted in the partial fulfillment of the requirements for the degree of Masters of Science in Fish Biology and Biotechnology**

**Department of Fish Biology and Biotechnology Faculty of Fisheries**

**Chattogram Veterinary and Animal Sciences University Chattogram-4225, Bangladesh**

**Authorization page**

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**This is to certify that we have examined the above Master’s thesis and have found that is complete and satisfactory in all respects, and that all revisions required by the thesis examination committee have been made**

**…………………………… ……………………………….**

**(Md. Moudud Islam) (Dr. SK. Ahmad Al Nahid) Supervisor Co-supervisor**

**………………………………………… (Md. Moudud Islam)**

**Chairman of the Examination Committee**

**Department of Fish Biology and Biotechnology Faculty of Fisheries**

**Chattogram Veterinary and Animal Sciences University Chittagong-4225, Bangladesh**

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**ABSTRACTS**

Artificial propagation is one of the significant advancements in the field of aquaculture of commercially important ornamental fishes. An assay was undertaken to study the breeding performance of oranda goldfish (*Carassius auratus*) broods (30- 44g), using different doses of synthetic ovulin hormone. Prior to present study, an experimental trial was conducted at a dosage of 0.3, 0.5, 0.7 and 0.9 ml ovulin/kg bodyweight. In this study, ovulin hormone at a dose of 0.2, 0.4, 0.6 and 0.8 ml ovulin/kg body weight was intra-peritoneally injected where double doses in female and single dose in male. Male female ratio was 2: 1 in each group and no hormone was injected in control groups. Ovulation was observed between 8-13 hours after injection and all the injected females ovulated except control groups. The eggs were viscous, translucent with eye spot, spherical shape and yellowish in color with diameter ranging between 0.6- 0.9 mm. Injected fish at a dose of 0.4 ml ovulin/kg body weight (BW) showed significantly better (*p*<0.05) outcomes in all attributes of breeding performance than that of other groups and found to be effective with 21.74% of relative fecundity, 73% of fertilization rate, 71.07% of hatching rate and 69.64% of larval survival rate compared to other doses. The present study demonstrated that, the variation of hormone doses resulted in variability in stripped eggs (360-717), relative fecundity (10.08-21.74%), fertilization rate (30.67-73%), hatching time (36-50 hours), hatching rate (31.50-71.07%) and larval survival rate (27.42-69.64%). The hatchlings were transparent and measured 1.1- 1.3 mm of total length with a large oval head, a well-defined yolk sac and a short tail. At the end of the study, cost benefit analysis was also accomplished. The positive response to artificial breeding and cost effectiveness of ovulin hormone to oranda goldfish breeding performance makes it potential to carry out the artificial breeding of this species in commercial scale.

**Keywords**: *Carassius auratus*, oranda goldfish, ovulin, induced breeding, synthetic hormone