

Effect of Temperature on the Fertility and Embryonic Development of *Carassius auratus* Linnaeus, 1758 goldfish in aquarium

Thida Hnin¹ and Min Oo²

Abstract

The major purpose of this research was to investigate the appropriate water temperature for fecundity and fertility, and to record the developmental stages of *Carassius auratus* gold fish embryo. This study was done at Ngapali Aquarium and hatchery in Hlaing Thar Yar Township from October 2017 to October 2018. The embryonic developmental stages of this species were recorded by taking photos with microscopic observation. To examine the temperature on fecundity and fertility 24 males and 12 females' breeders of this species were studied in two experiments. In one experiment, 12 males and 6 females were used with 2:1 ratio in six aquaria under three different temperature; control (23°C), 26°C and 29°C respectively. Sexual dimorphism found that male with reproductive tubercles on the pectoral fins while female breeders with swollen belly containing mature ova were also recorded. Although the difference of fertilization rates was studied between (92±2.16) % in 26°C and (79.28±2.95) % in 29°C but there was no difference of fertility between (86±3.91) % in 23°C. The highest fecundity was occurred (4278.75±442.53) % in moderate temperature of 26°C for this species. The highest fertilization rate was also found in 26°C. This finding showed with *Carassius auratus* gold fish could support for high demand of aquarium trade and hobbyists in Myanmar because of reasonable price and attractive color and features.

Key words: fecundity, fertility, developmental stages, goldfish

1. Lecturer, Dr., Department of Biology, Yangon University of Education

2. Assistant Lecturer, Department of Zoology, Defence Services Medical Academy