

**ORL-AAQ-02****Studies on Growth Performance, Fecundity and Water Chemistry in Cage Culture of *Bellamya bengalensis* (Lamarck,1822) in the Fish Pond of Degree Campus, Biratnagar, Nepal**

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The growth of *Bellamya bengalensis* depends on various factors such as pH, dissolved oxygen (DO) levels, water temperature, and the quality and quantity of feed provided. A study was conducted from 17 July to 30 December 2022, over a period of six months at the fish pond of Degree Campus, Biratnagar, Nepal. During the study, 198 *Bellamya bengalensis* of different weights and lengths were placed in nine metal cages (30.48cm x 30.48cm x 30.48cm) at a rate of 22 snails per cage. These snails were fed with formulated food containing different protein levels: 30%, 70%, and 0%. The water pH ranged from 6.50 to 7.81, DO levels ranged from 6.42mg/L to 7.94mg/L, and water temperature ranged from 19°C to 30°C.

The study showed that the cages supplied with feed containing 30% protein and 70% carbohydrate (cage A) exhibited the highest average body weight gain (2.05 g), specific growth rate (0.19 %/day), and feed conversion ratio (3.53), while the cage with no feed (cage C) exhibited the lowest values for these parameters. Additionally, 60 mature *Bellamya bengalensis* snails were collected from the local market, and 30 female snails were studied for their fecundity. The snails showed variation in total weight (3.68g to 9.06g), total length (2.7cm to 3.7cm), and ovary weight (0.60g to 1.90g). The study found a positive correlation between snail fecundity, body parameters (total length and total weight), and ovary weight. It was observed that fecundity was highly correlated with ovary weight ( $r=0.91$ ) compared to body parameters. Furthermore, an analysis of variance (ANOVA) indicated a significant difference in fecundity with ovary weight and body parameters (total length and total weight) ( $P<0.05$ ). The study also revealed that the Gonadosomatic index (GSI) value was highest in September at 16.78% and decreased to 13.13% in December. The maximum egg size (2.16mm) was recorded in September, while the minimum egg size was observed in January.



Photograph: Setting of cage for snail rearing in the pond feeding with different feeds.