

## Determination of the Appropriate *ayza sativa* (Rice) Straw Fertilizer Loading Level to Enhance Survival Rate of *Catla calla* (Catla) Post Larvae

M.A.D.U. Maddumaarachchi<sup>1\*</sup>, K.M.D.M.Somarathna<sup>2</sup>, N.P.P.Liyanage<sup>1</sup>

<sup>1</sup>Department of Animal Science, Uva Wellassa University, Badulla, Sri Lanka

<sup>2</sup>Aquaculture Development Center, National Aquaculture Development Authority (NAQDA), Udawalawa, Sri Lanka

Introduction of the Indian major carp species like *Catla calla* (Catla), *Labeo rohita* (Rohu) and *Cirrhinus mrigala* (Mirigal) has been resulted in a significant development in inland fisheries in Sri Lanka. Among these introduced fish species, Catla contributes to freshwater fish production in Sri Lanka significantly. One of the identified problems in Aquaculture Development Center, Udawalawa was lower survival rate of Catla post larvae at nursery stage. Hence this study was conducted to determine appropriate rice straw loading level to enhance survival rate of Catla post larvae reared in nursery tanks of 20 m<sup>2</sup>. The experiment was conducted using a Completely Randomized Design (CRD). A preliminary fertilizing procedure was done to determine a definitive range (75-90 g m<sup>-2</sup> of dried rice straw) to conduct the experiment and the tanks were fertilized at above rates. Body weights and total lengths of post larvae were recorded at stocking and water quality parameters were recorded twice a day in each treatment. Number of survived post larvae in each treatment were recorded with the body weights and total lengths at the end of the rearing period. Recorded data were analyzed using one way ANOVA and Tukey test was used to compare mean values at 5% significance level. Total plankton count, survival rate, length gain and weight gain of post larvae were significantly different ( $p < 0.05$ ) among treatments. 80 g m<sup>-2</sup> loading level of rice straw was the best treatment showing highest survival rate (66.6210.69), greatest length gain (159.0816.99 cm), maximum weight gain (2,5761176g) and highest mean value of total plankton count (54,9101646). Adequate amounts of planktons and proper water quality parameters act as major reasons for higher survival rate of Catla post larvae. Therefore, the loading rate of 80 g m<sup>-2</sup> was found to be best among treatments for fertilizing Catla nursery tanks with rice straw to enhance survival rate.

**Keywords:** Rice straw, Catla post larvae, Survival rate, Plankton