

## Determination of Suitable Breeding Substrate for Redside Barb (*Puntius bitnaculatus*) in Captive Conditions

G.K.Y.Wajiramala<sup>1\*</sup>, A.S. Mahaliyana<sup>1</sup>, W.P.R. Chandrarathna<sup>2</sup> and S.C. Jayamanne<sup>1</sup>

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

<sup>2</sup>Ornamental fish breeding and Training Center, Rambadagalle- National Aquaculture Development Authority of Sri Lanka

Redside barb (*Puntius biniaculatus*) is one of the most popular indigenous ornamental fish species, which commonly found in Sri Lanka. This species has been heavily collected from wild for aquarium trade and have a severe influence on the reduction of naturally available stocks. Development of captive breeding and larval rearing techniques are found as an effective strategy to increase commercially available stocks, which will also lead to ensure the sustainable utilization as a valuable resource. Hence, the objective of this study was to determine the suitable substrate for successful breeding of Redside barb in captivity. Three types of breeding conditions; gravels with aquatic plants, sand with aquatic plants, only aquatic plants were provided with stilled water in 60 cm x 30 cm x 30 cm size indoor glass tanks and three replicates for each treatment were used. Mature males with bright red colour stripe on their body and females which released yolked eggs, when slight pressure is applied on their abdominal region were selected as brooders for the experiment. Selected individuals were introduced into each tank at 2:1 male to female ratio. Completely Randomized Design was used as the experimental design and produced fry number was counted. Data were analyzed using one way ANOVA. Spawning was observed in all conditions and fry number varied significantly among three different substrates ( $p < 0.05$ ). The highest mean fry number was observed in the substrate of gravel with aquatic plants ( $195 \pm 20$ ) compared to other 2 (fry number in the substrate which contain sand with aquatic plants:  $77 \pm 39$  and only aquatic plants:  $33 \pm 33$ ). Results of this study revealed that the most suitable breeding substrate for the Redside barb in indoor glass tanks was the substrate with a gravel bottom and aquatic plants.

**Keywords:** Redside Barb (*Puntius bimaculatus*), Captive breeding, Breeding substrate