

Captive breeding of *Puntius singhala* under the conditions of ornamental fish breeding centre, Rambadagalla

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Puntius singhala is an endemic freshwater fish of Sri Lanka, which has a high demand in the export ornamental fish trade. Their population is declining gradually due to several reasons, such as over collection and mishandling of pesticides. Therefore, conservation is essential to protect this valuable species. The primary objective of this study was to determine the ideal breeding environment for *Puntius singhala* under captive conditions. Identification of sex ratio suitable for captive breeding served as the secondary objective. The experiments were conducted in two stages. Firstly, cement breeding tanks with seven different artificial environments were created and the best environment was identified. Water quality parameters were also measured during the study and fish were fed with *Artemia*, meat and Vitamin E, C enriched formulated feeds. Secondly, different numbers of males and females were used to identify male to female ratio.

Out of seven different captive conditions, in the experimental tank with “Aquatic plants, Sandy bottom, Aeration and Water flow”, the highest number of fry (31) were observed and the suitable male female ratio was 2:1 (61 numbers). Although the highest number of fry of *P. singhala* was observed under this condition, closer to the natural habitat, a considerable amount of fry (14) were observed in non-flowing water conditions too.

Puntius singhala prefers to live in their natural habitat with clean and slow running water. But the results of this study revealed that *P. singhala* can be successfully bred in non-flowing hard water (120-150 mg/l) conditions of the Ornamental Fish Breeding Centre, Rambadagalla. The results of these captive breeding experiments can be successfully used for conservation of *P. singhala* for export. Results of this study will be helpful for the identification of conditions for captive breeding of this species for further research. Captive breeding is a good proposition to conserve their population, which will enable the industry to thrive.

Keywords: *Puntius singhala*, captive breeding, sex ratio

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