

Captive breeding of two widely exploited endemic fish species for aquarium trade in Sri Lanka

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Abstract

Indigenous species contribute to four percent of the total freshwater ornamental fish exports of Sri Lanka and all of them are collected from the wild. This exploitation has severely depleted the wild populations and hence the Government has imposed restrictions and prohibitions on the export of endemic fish. Captive breeding of the indigenous fish species would therefore reduce the threat on the wild populations and increase the exports. A captive breeding program was initiated in the laboratory for *Puntius nigrofasciatus* (Black Ruby Barb, family Cyprinidae) and *Belontia signata* (Comb Tail, family Belontiidae).

Brood stock was collected from Thalawathura Oya located in Ginigathena and were kept in the laboratory tanks (24 cm x 24 cm x 12 cm) providing the conditions similar to their natural habitat as far as possible. Water temperature was maintained around 26 °C and was monitored using a thermometer. Water pH was monitored using a pH meter and was kept at 6.8- 7.0. Live floating and rooted plants such as *Vallisneria* and *Hydrilla* were provided and a constant flow of water was maintained using a power filter.

Formulated food was given once a day in the morning. In addition, a special egg production enhancing feed (Discus Vital- White Crane Aqua-Tech Co., Ltd. Sri Lanka) was provided during the period of the experiment. Tank was cleaned once every month and the filters were cleaned as needed. The fish were treated whenever they showed signs of disease. Fish were used for breeding after they reached a standard length over 3.5 cm.

Number of hatchlings and number of fry survived at the end of the fourth week were counted for each species to determine the survival rate. Although *Puntius nigrofasciatus* lay a large number of eggs (>300) at each spawning it has a low mean survival rate (20.7%) in captivity but under extreme care and hygienic conditions such as water clarity, temperature around 26 °C and pH at 7.5 are provided, survival rate is as high as 56.1%. *Belontia signata* could be easily bred under the laboratory conditions. The average number of eggs laid was over 150 during single spawning and the mean hatchling survival rate was about 20%.

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